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ABOUT
WHAT DOCTORS DON'T TELL YOU

What Doctors Don't Tell You, the publisher of The Vaccination Bible, has been telling people about the secrets of orthodox medicine for more than 10 years. Its principal publication is the monthly newsletter of the same name, which was first published in 1989. Today it is read by subscribers in over 100 countries around the world who have come to rely on its in-depth research. The company has also published more than 25 books on specific health issues.

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CHAPTER ONE

VACCINATIONS AND AUTISM

MMR and autism

So, is there a link between the MMR (measles, mumps, rubella) vaccine and autism? The official line is that is definitely no connection whatsoever. Study after study has failed to make the association that was infamously suggested by Andrew Wakefield in 1998, our regulators tell us. His theory eventually cost him his job at the Royal Free Hospital in London and he was also disbarred, and is not allowed to practice medicine as a doctor.

Unfortunately, the medical authorities—and, more recently, the press—have been selective with the truth. To give an example, one large study, involving 533,304 children, established a link, but was ignored by everyone, while a much smaller study, which failed to see an association, made the headlines. The latter study, which appeared in The Lancet, could find 'no convincing evidence' of a link between the vaccine and autism. Researchers compared the records of 1,294 children who had autism or a PDD (pervasive development disorder) with 4,469 children who did not have autism.

Overall, 78 per cent of the autism group had received the MMR injection, while 82 per cent of the non-autism group had been given the triple jab. The 4 per cent difference was not significant, said lead researcher Dr Liam Smeeth of the London School of Hygiene and Tropical Medicine. A Department of Health spokesman, who was also widely quoted, said: "The study is in full agreement with other international studies carried out in different ways, by different researchers, in different countries."

This presumably excludes the significant study we looked at. It's significant because it is based on the largest group of children ever analysed, and it was the same group used by the Madsen study team which found no link, and which was used ever after by government agencies around the world. Madsen's data was reanalyzed, and the age group of the children was extended to five years and older, the year when autism is first diagnosed in Denmark. The Madsen team had stopped looking after the child was older than four years, so it's not surprising that his team was unable to find many autism cases.

All of this leaves a nasty taste, and it feels that we're still playing propaganda rather than science. Nobody has commented on the later Danish study, nor has anyone satisfactorily answered other questions that remain hanging, such as:- The 1992 mass vaccination programme in the UK was followed a year later by a sudden rise in autism levels. Why?--A further mass vaccination campaign in late-1994 heralded another sudden and steep rise in autism figures throughout 1995 and 1996. Why?--The second round of MMR vaccinations was carried out in the autumn of 1996. Again, autism levels rose dramatically in 1997. Why? For us, and for many thinking parents, the latest Lancet study does not mean 'game over', no matter how many times the media insists that it is. For us, vital questions remain unanswered. While governments are fast and loose with the facts just to get patients back in line for vaccinations, we fear these questions will never be answered satisfactorily.

Study replicates Wakefield's findings

Researchers from the New Jersey Medical School have discovered 'evidence of marked inflammatory and immune abnormalities in children with autism associated with gastrointestinal symptoms'. Wakefield had discovered that autistic children had similar inflammatory bowel disease, which could

be caused by the triple MMR vaccine. He described the vaccine as 'interference', as it could suppress the immune system. Wakefield had recommended single shots, given one year apart.

While the New Jersey data may not be a 'knock-out' blow, it's equally fair to suggest that the studies that have failed to see an association aren't the final words, either. Thoughtful parents are recommended to continue to tread with care.

Wakefield's work

The Royal Free team under Andrew Wakefield found gut abnormalities in a group of children with autism (Lancet, 1998; 351: 637-41). Of 48 children who'd developed autism just after vaccination, 46 exhibited these same bowel abnormalities. In Wakefield's view, the sheer number of children showing up with this particular bowel disorder and autistic tendencies coming on so soon after the vaccine was given is more than can be accounted for by chance.

Wakefield postulates that the attenuated strain of the measles virus promotes an immune response insufficient to control the virus. As a result, a weakened 'infection' of sorts is established in the intestines and produces this increased permeability of the gut wall as well as the abnormal increase in the number of cells in the tissues. Urine tests showed that all the children had marked B12 deficiencies, as seen in other gastrointestinal disorders. Since B12 is necessary for the normal development of the central nervous system, Wakefield speculates that the B12 deficiency may be a contributory factor in the autistic regression seen in these children.

Besides Wakefield's research which is ongoing there is also anecdotal evidence from families. Of some 2500 families who have contacted the vaccine damage parent group JABS and the solicitors Alexander and Co, seeking compensation for vaccine damage, at least half these cases concern children who were developing normally, but then became autistic soon after vaccination. Furthermore, autism as a side effect is reported twice as often as any other serious side effect of the MMR.

Others find a link

One study that confirmed a definite causal link between the MMR (measles, mumps, rubella) vaccine and autism used the same data employed by an earlier study that governments have relied on to deny the link! According to the reanalysis, the vaccine increases the risk of autism by 850 per cent, or nearly 500 per cent if we allow for greater diagnostic awareness, one of the major arguments put forward for the sudden increase in autism. This conclusion contradicts that of the Madsen study carried out in 2002, which found no link, and which governments have gratefully clung to ever since.

So why the enormous discrepancy between the two trials? Autism is usually diagnosed only at age 5 or older, or it is in Denmark from where the data for both studies has been gleaned. The Madsen study monitored the progress of vaccinated children in Denmark only for four years, so it's hardly

surprising that few, if any, cases of autism were established. Less severe cases, which might have become apparent even later, were certainly not included in the findings.

The new study, carried out by American paediatrician Dr Fouad Yazbak and Dr G S Goldman, tracks levels of autism in Denmark from 1980 - seven years before the MMR vaccine was introduced in Denmark - until 2002. Prevalence of autism among children aged from 5 to 9 stood at 8.38 cases per 100,000 in the pre-vaccine years of 1980 to 1986, and then rose to 71.43 cases by the year 2000. Dr Samy Suissa of McGill University had similar problems with the Madsen study. When he analysed the statistics he discovered that the rate of autism increases to a high of 27.3 cases per 100,000 two years after vaccination compared with just 1.45 cases in non-vaccinated children.

Hiding behind junk science

In early February 2008, the medical profession and the media gleefully announced that the final evidence was in. A new study had proven—with "no doubt", according to the London Times—that the measles–mumps– rubella (MMR) vaccine does not cause autism. That same month, another study purported to offer definitive evidence that thimerosal, the mercury-based preservative in numerous vaccines, could not be implicated in autism.

Barely a month later, it was revealed that an American court begged to differ. After reviewing the first of three test cases involving a 12-year-old girl who'd developed autistic-spectrum disorder (ASD) as a toddler, a US Federal Claims Court concluded that the booster vaccinations that the child had received when she was 18 months of age had aggravated an underlying cellular disorder, which ultimately manifested as autism.

The three-member panel of Special Masters (the presiding justices of the court), concluded that the girl had been developing normally until she received, at 18 months, nine vaccinations: the tetanus–diphtheria– acellular pertussis (Tdap) triple jab; the haemophilus influenza type B meningitis vaccine; the triple MMR; the varicella chickenpox vaccine; and the inactivated polio vaccine.

After a series of episodes of encephalopathy (brain inflammation), the child's health deteriorated. Eventually she was diagnosed because of symptoms that were consistent with ASD. The girl's lawyers attempted a broad-brush approach, arguing that her autism was caused by the combination of the MMR jab along with other vaccines that contained thimerosal, as one of two such test cases claiming that it was the combination of vaccine agents that caused the damage. Furthermore, a paediatric gastroenterologist testified that the child had a persistent measles virus in the lymphoid tissue of her bowel.

In fact, subsequent tests found that the girl had a 'defect' in cellular metabolism, and it was concluded that she had oxidative phosphorylation disease, a disorder of cell mitochondria that affects the ability to process energy.

Writing on behalf of the Department of Health and Human Services, US Assistant Attorney General Peter Keisler and other Justice department officials recommended that compensation be awarded to the family.

A chink in the armour

This landmark decision marked the first time that any court anywhere had ruled that vaccination can bring on autism.

This not only effectively countered the position adopted by governments and the medical profession—that vaccination has nothing to do with the epidemic of autism around the world—but it also leaves the door wide open for many more thousands of such families with autistic children, in America and across the globe, to seek compensation for damages as a result of vaccination.

This case is only the first of approximately 4900 autism cases, collectively termed the Omnibus Autism Proceeding, now pending before the US 'Vaccine Court', which reviews whether or not individuals are entitled to a share of the Vaccine Injury Compensation Fund, a pool of money built up by a special tax on vaccines, and distributed by the US government to children found to have been damaged by vaccines.

In the 17 years since the Vaccine Court and fund were created, it has paid out nearly $2 billion in damages to American parents whose children were damaged by one of the child-hood vaccines (N Engl J Med, 2007; 357; 1275–9).

Of some 7000 families who have filed claims of an adverse reaction with the Vaccine Injury Compensation Program (VICP), approximately 2000 families—or slightly less than one-third—have won their cases, receiving individual compensation at an average of $850,000. Up until now, the VICP has rejected some 300 claims of autism resulting from vaccination, largely because the medical establishment was refusing to recognize the existence of any such link.

Nevertheless, all this could change with the court's recent ruling on this first case—leaving the US government and the vaccine industry holding its collective breath.

Awarding similar damages to just the families in the autism Omnibus alone would amount to $3.7 billion. And, assuming that just a tiny percentage of the other families of the hundreds of thousands of autistic children in the US come forward, it would not only bankrupt the vaccine fund, but also leave the American vaccination programme in tatters.

All major studies flawed

But how could the court have ruled in the girl's favour, when medicine has so long claimed that its studies definitely prove otherwise?

The answer is simple: junk science. Close examination of the evidence to date reveals flaws in the major studies used to argue against a link between autism and vaccination—particularly the new studies considered to have dealt a knockout blow to any possible connection between the vaccine and autism.

The evidence also reveals a concerted cover up initiated by the US's leading agency against preventable disease and a deliberate policy by the top US government agencies charged with protecting the public health to conceal data that could undermine public confidence in vaccination.

One study of the MMR vaccine—the one held up by the press as the final nail in the coffin for theories of the vaccine as a cause of autism—claimed to find no association between it and ASD (Arch Dis Child; 5 February 2008; doi: 10.1136/ adc.2007.122937). Researchers from the UK's Health Protection Agency, in partnership with various universities in the UK, examined a community sample of vaccinated children aged 10 to 12 years who had ASD, and compared them with two control groups: one made up of those who had special educational needs, but no ASD; the other was composed of those who had developed normally. These children were all then examined via blood tests for either the measles virus or an antibody response to it in the blood.

The study claimed that there was no difference between the cases and controls in terms of measles anti-body response, nor any relationship between the severity of autism and levels of measles antibody. What's more, only one child—and this was in the control group—had symptoms of an inflamed gut.

A central tenet of gastroenterologist Andrew Wakefield's theory is that the live measles virus from the vaccine, either alone or in combination with two live viruses (as in the MMR vaccine), can cause persistent enterocolitis and gut damage, allowing undigested proteins to 'leak' through the gut membrane and, eventually, to make their way to the brain.

However, even a cursory look at the study reveals basic problems in its design. There were 735 children 'lost' to the study by the second phase and, of the remaining 155 children who had special educational needs or ASD, 100 of them did not produce satisfactory blood samples. Consequently, the study's conclusions rested upon the blood samples of just 55 children, a sample too small to be definitive in any significant way.

The authors ruled out any gut problems in the ASD children on the basis of criteria that required five "current and persistent" symptoms: diarrhoea; vomiting; weight loss; abdominal pain; and blood in stool or past persistent diarrhoea of more than two weeks' duration. Current constipation was ruled out as a symptom.

Writing from the US, where he now lives and works, Dr Wakefield wrote an impassioned reply.

"Over the last 10 years, we have evaluated several thousand children on the autistic spectrum who have significant gastrointestinal symptoms," he wrote. "Upper and lower endoscopy and surgical histology have identified mucosal inflammation in excess of 80 per cent of these children. Almost none of these children with biopsy-proven enterocolitis would fit the criteria set out above."

As Wakefield pointed out, all these thousands of children he examined almost never had vomiting or current weight loss, or passed blood via the rectum.

The criteria set out in the study reveal a "singular lack of understanding of the episodic, fluctuating and alternating [diarrhoea/ constipation] symptom profile experienced by these children", he added. Moreover, none of the studied children was examined by any test, such as endoscopy, to definitively reveal the kind of mucosal damage he routinely records.

In other words, the study used symptom criteria that were utterly at odds with the symptoms published by Wakefield (Histopathology, 2007; 50: 380–4).

The fact that the study moved the goalposts on gut symptoms is particularly surprising, given that one of its authors routinely acts as an expert witness in British MMR litigation for the defence (drug companies).

As Wakefield points out, this author would have had frequent access to the clinical records of autistic children, together with all of the relevant intestinal symptoms.

Wakefield also claims that it was a “major error” to presume that using peripheral blood cells was just as valid as studying gut mucosal tissue when looking for the presence of a persistent virus such as measles.

The mercury connection

Several months before the British MMR study, America was doing its own share of junk science.

A team of scientists from the Vaccine Safety Datalink Team at the Centers for Disease Control and Prevention (CDC) in Atlanta, GA, published a study that supposedly demonstrated—once and for all—that thimerosal, the mercury-derived preservative, had nothing to do with autism (N Engl J Med, 2007; 357: 1281–92).

In this study, 1047 children, aged 7 to 10 years, were given standardized tests measuring 42 neuropsychological parameters. The researchers assessed each child’s exposure to mercury (in the form of thimerosal) from immunization and other medical records, as well as from their parents’ records and interviews. Their neuropsychological findings were then compared with their mercury exposures prenatally, and in the first and seventh months of life.

The study found only a few significant associations between exposure to mercury and effects on the brain—some positive and some negative. However, none was related to autism—largely because no neurological tests were performed for autism.

The researchers claimed to have found only one relevant association between the preservative and neuropsychological disturbance: nervous tics in boys. Otherwise, in some cases, claimed the study, mercury exposure was associated with improved performances in fine motor coordination, and attention and executive functioning.

In other words, exposure to one of the best-known toxins on earth might even be good for you.

However, Sallie Bernard, one of the panel members of external consultants for the study, had a letter published in The New England Journal of Medicine (2008; 358: 93–4) in which she publicly challenged its conclusions.

The study cohort, she wrote, had been deliberately skewed to include only those children who were the least likely to exhibit neuropsychological impairment. Also, once again, 70 per cent of those recruited ultimately dropped out, leaving too small a sample upon which to hang any meaningful scientific conclusions with certainty.

But perhaps most remiss of all, the study did not find autism because the question was never asked.

In addition, according to David Kirby, author of Evidence of Harm (St Martin's Press, 2005), the study authors failed to connect the dots: tics among boys is a well-recognized presentation of ASD.

Studies from other countries have produced their own versions of junk science. A study from Hong Kong measured mercury levels from the hair and blood of children with autism, and compared them with a matched control group of normal children. These children were, on average, seven years of age (J Child Neurol, 2004; 19: 431–4). These investigators could find no differences between these two groups of children, and so concluded no causal relationship between environmental mercury and autism.

However, Catherine DeSoto and Robert T. Hitlan, two doctorates at the department of psychology at the University of Northern Iowa, re-analyzed the data reported in this Hong Kong study and found numerous computational errors. Using the corrected figures, DeSoto and Hitlan showed a significant relationship between blood levels of mercury and a diagnosis of ASD.

"Moreover, the hair-sample analysis results offer some support for the idea that persons with autism may be less efficient and more variable at eliminating mercury from the blood" (J Child Neurol, 2007; 22: 1308–11).

However, the biggest mountain of junk science is the database used as the source for the New England Journal thimerosal study and the five large-scale population studies showing that the agent is not dangerous to children. It was also the basis of the US Institute of Medicine's 2004 report that ruled against a connection between thimerosal and autism. In fact, the Vaccine Safety Datalink (VSD) has been the source of more than 75 scientific articles, all claiming no association between thimerosal and autism.

The VSD project is a collaboration between the CDC's Immunization Safety Office and eight large managed-care organizations (MCOs). The project was launched in 1990 to monitor immunization safety and to gather data on vaccinations, including medical status. The VSD gathers data on the types and numbers of vaccinations, and the types of visits and medical outcomes, including urgent-care visits, and birth and census data. Most of the children in the database reside in California, where managed care more or less originated.

In late 2006, a National Institutes of Health panel, led by NIH director Dr Elias A. Zerhouni, signed a statement, submitted to Congress, that answered a query from a group of senators as to whether the VSD could be relied upon to compare autism rates in children before, during and after the gradual removal of thimerosal from US vaccines, which began in 2000.

The NIH's response was that the database could not be relied upon because it had an enormous number of "weaknesses" and other "limitations". Such an analysis would prove "uninformative", even "misleading".

First, some 25 per cent of children born during the VSD's existence were not included. Also, the database had no information on the thimerosal-containing drugs given to the mothers, nor on the cumulative exposure of individuals to other sources of mercury, to arrive at a total mercury burden. The panel also expressed concern over the method by which autism was diagnosed and how accurately it had been recorded. These and other issues would certainly contribute to an "under-ascertainment" of the true number of autism cases.

Non-reporting may be a factor. As David Kirby says in his book, the VSD rate of autism was 11.5/10,000 children before thimerosal was banned from vaccines, whereas the rate of autism in California was 30–40 /10,000 children—nearly four times as many.

The NIH panel might have received plaudits for this rare example of governmental whistleblowing except for one disturbing fact. The CDC, who were the very architects of the database, has been using every means at its disposal to avoid the public release of these data after the autism connection was first revealed . So, the database was good enough until it was found to contain damning evidence against vaccination.

The implications of the Vaccine Court's findings are extraordinary. The court didn't care what caused the autism—thimerosal, MMR or the combined insult of nine vaccines. It took the commonsense approach—the kind you and I take. If a healthy child is knocked over by a hit-and-run driver and left crippled forever, it is reasonable to conclude that the car caused the damage, even if the driver never comes forward.

The effect of this first court ruling goes far beyond the MMR jab or a preservative. The rates of autism have dropped in the US now that thimerosal has been removed, but the numbers are still far higher than for generations past.

However, given the enormous commercial, political and legal ramifications of any evidence that vaccines are indeed responsible for destroying an entire generation of children, it is unlikely that any scientist will have the temerity to look for other culprits.

Nevertheless, and thankfully, this ruling of the court has revealed one simple, commonsense truth. A legal precedent has established that there is reasonable doubt that we can pump scores of foreign proteins loaded with toxins into our infants with impunity and not expect disastrous outcomes.

The vaccine or the damaged cell: which came first?

The doctor of the girl in the test case concluded that she had evidence of a 'mitochondrial disorder' that predisposed her to autism. The court concluded that the vaccines made this latent genetic tendency an actuality.

But which came first? Was oxidative damage inherent in her or was it created by the vaccine? The proponents of the oxidative theory argue that, as autism runs in families, the genes involved in autism may be those that relate to mitochondrial function.

Mitochondria are the tiny powerpacks of the cell, providing cells with the energy to do their jobs. Doctors in the case testified that the girl's cells do not metabolize energy properly. But one study of 159 patients with autism discovered that nearly half had abnormal cell-energy metabolism. This could be relevant to autism, as the central nervous system is highly dependent upon mitochondrial function, or it may have to do with wireless radiation (see WDDTY vol 18 no 9), which effectively shuts down the cell, preventing it from excreting mercury and other heavy metals.

More junk science

All of the major studies claiming to refute the autism connection with vaccination are flawed. In fact, evidence obtained by various groups via the Freedom of Information Act reveals that the CDC spearheaded a major worldwide movement to find studies that would bury the thimerosal connection.

- Danish researchers were responsible for the near-simultaneous release of four studies, three of which showed no link between autism and thimerosal (JAMA, 2003; 290: 1763–6; Pediatrics, 2003; 112: 604–6; Am J Prev Med, 2003; 25: 101–6). They were shopped by the CDC as having the best data to partner with (see www.putchildrenfirst.org/media/4.16.pdf).

  Nevertheless, Danish autism records have changed so frequently

  that they may have falsely decreased the actual number of children who have the condition. Outpatients clinics, where most cases of autism are diagnosed, were only added in the last few years of the 30-year review, making it appear that autism went up after thimerosal was removed. As PutChildrenFirst notes,it is like studying 'Divorce Rates in North America' but using only figures from Mexico and Canada, adding those from the US in the last few years, and then claiming that divorce rates went up.

- Sweden limited itself to examining only those autism cases diagnosed

  in hospitals, which tends to under-report the true figures (Am J Prev Med, 2003; 25: 101–6).

- Great Britain reported a study based on data from more than 14,000 children in the Avon area, and managed to show that mercury was actually good for children, offering a "beneficial effect" (Pediatrics, 2004; 114: 577–83).

  Another British study purporting to show the lack of association between MMR and gut problems restricted its analysis to hospital emergency admissions (BMJ, 2005; 330: 1120–1). As lawyer Clifford

MMR and mercury detox

The latest views about children with autism is that it is a multifactorial problem, due to a combination of vaccination, heavy-metal exposure and even to microwaves, as generated by mobile phones. Typically, a child exhibits gut conditions, problems with detoxification and heavy-metal poisoning. Here are a few basic ways to regularize these symptoms.

- Make sure your child receives good supplements of vitamins, minerals and essential fatty acids, including trace minerals such as zinc and selenium.
- Remember, gut health can be enhanced with probiotics and digestive enzymes.
- Fix any Candida problems (see The Candida and ME Handbook. London: WDDTY, 2001).

- Supplement with glutathione and products that boost its uptake, which helps with mercury detox. Children exposed to thimerosal have lower cellular levels of glutathione (NeuroToxicology, 2005; 26: 1–8). A number of companies offering such support suggests that the products should be sodium benzoate-free to support clearing of metals and other toxins.

- Support the rebuilding of gut cellular barriers with the use of glycosa-minoglycans. These gut-protective barriers are often impaired when a child is exposed to the MMR shot or heavy metals.

- Chelate heavy metals naturally or with homeopathic methods. One such agent is zeolite, a natural volcanic mineral that is supposed to chelate heavy metals more gently than do chemicals such as DMSA.

Monkey business: Why the MMR-autism debate won't go away

Health agencies and doctors had hoped that the debate would have ended with the public vilification of Dr Wakefield. In 2010, Wakefield and two former colleagues from the Royal Free Hospital in London were found guilty of misconduct by the General Medical Council (GMC), the UK's medical disciplinary body. The GMC described the three men as being "dishonest, irresponsible and [showing] callous disregard for the distress and pain of children".

The charges were related to the methods employed by Dr Wakefield in obtaining their research data, including the use of "high-risk" methods such as lumbar punctures, and paying £5 to children attending a party for samples of their blood.

But the hypothesis that the MMR vaccine could cause autism was not on trial at the GMC's 20-month hearing, the longest in its history. In his 1998 paper, Wakefield found that 12 autistic children—examined at the request of their parents—had persistent enterocolitis and inflammation of the colon, among other intestinal abnormalities. He later discovered that eight of the 12 had been given the measles vaccine, which led him to consider the possibility that the vaccine might be a cause (Lancet, 1998; 351: 637–41).

Despite the furore that followed, Wakefield has never been any more emphatic than that as to any possible link between the vaccine and the gastrointestinal conditions. Indeed, at a press conference following the publication of the paper, he confirmed that his research had not proven any association between the MMR vaccine and autism.

Yet, bizarrely, journalists at the press conference appeared to infer from that statement that Wakefield and his team were suggesting a causal link between the vaccine and autism—and this became the story that has since spread far and wide over the past 12 years, during which time, the MMR take-up rates in the UK fell to around 80 per cent (Thompson G. Measles and MMR Statistics, 2008. London: House of Commons Library). Worryingly, for an already cash-strapped UK government, any further decline in take-up would have triggered automatic compensation payments

to the vaccine manufacturers.

But all that ended with the GMC's verdict. Finally, the journalists, doctors and scientists alike were able to disassociate the MMR vaccine from autism once and for all—that is, until new evidence came to light, gleaned from tests on 14 monkeys.

Hear no evil, speak no evil . . .

The primates had been tested by Wakefield and other researchers at the University of Pittsburgh School of Medicine, in Pennsylvania, to look for any early developmental problems when given vaccines according to the numbers and scheduling order that is followed by the vaccination programme in the US. Ten of the monkeys were given a hepatitis B vaccine—the first jab in the long, comprehensive vaccine programme required for American children—and, almost immediately, all the monkeys lost the reflexes that are critical for survival. They also suffered brain-stem damage.

These results were part of the second phase of a study that had been started in 2002 as a collaboration between the University of Pittsburgh and the Thoughtful House Center, the autism research unit set up in Austin, TX, by Dr Wakefield. He resigned from the centre after the GMC verdict.

Led by Dr Laura Hewitson from the university, the study claimed to be one of the first to investigate the synergistic effects of the entire American vaccination programme, as well as its impact on neurological development, and on the immune and gastrointestinal systems.

Dr Hewitson presented the study's initial findings at a conference on autism in London in 2008. In her talk, she announced that the "vaccinated animals exhibited progressively severe chronic active inflammation in gastro-intestinal tissue whereas unexposed animals did not. We have found many significant differences in the GI tissue gene expression profiles between vaccinated and unvaccinated animals."

In fact, the results virtually replicated the findings made by Wakefield and his colleagues in 1998, when they examined those 12 autistic children at the Royal Free Hospital in London. All had displayed a new form of GI inflammatory infection.

. . . and see no evil

In October,2009 the prestigious journal Neurotoxicology accepted for publication the paper from Wakefield et al., entitled 'Delayed acquisition of neonatal reflexes in newborn primates receiving a thimerosal-containing hepatitis B vaccine". The paper had been duly peer-reviewed, it had been approved by the journal's editor Joan Cranmer, and it was available to be read on the journal's website before being published in the journal.
However, in February , 2010—two weeks after the GMC verdict on Wakefield and his British

colleagues—the report mysteriously disappeared from the Neurotoxicology website. In fact, Cranmer had been under pressure to remove the paper as early as the previous November, but had rebutted the complainant with the response that Wakefield's paper had been "subjected to rigorous independent peer review according to our journal standards", according to Age of Autism on 2 March 2010 (see www.ageofautism.com).

However, by February, her position—along with that of the journal—appears to have changed dramatically. The journal's publisher, Elizabeth Perill, told Lyn Redwood of SafeMinds—a non-profit pressure group that is working to have thimerosal removed from vaccines and which partly funded the monkey study—that the research was "not suitable" for publication. The decision mirrors the response of The Lancet journal, which retracted Wakefield's original 1998 paper immediately following the GMC verdict. The word 'Retracted' is now plastered in large red capital letters over each page of the study, making it impossible to read.

Changing the story

Censorship and the manipulation of data appear to be the modus operandi of health authorities and most researchers when attempting to disprove any causal link between vaccines and autism whereas, all along, what parents have wanted was merely an open-minded debate, and to be given the known facts concerning the safety of the MMR and other vaccines that their children are required to have.

Every health authority stands by the claim that numerous studies have conclusively established that the MMR vaccine does not cause autism. The US Institute of Medicine is one of the many authoritative bodies to make these reassuring claims to parents, and has relied on several published papers as supportive evidence. One report, prepared by Eric Fombonne and his colleagues at the Children's Hospital in Montreal in Quebec, Canada, demonstrated that pervasive develop-mental disorders, such as autism, continued to increase in Montreal between 1987 and 1998, during a period that MMR vaccine coverage had decreased (Pediatrics, 2006; 118: e139–50). In passing, Fombonne mentioned that the vaccine data had been obtained from five-year-olds attending kinder-garten during 1993 to 2004 in Quebec City.

However, as Dr F. Edward Yazbak, a researcher for the TL Autism Research in Falmouth, MA, has pointed out, Quebec City is around 160 miles (265 kilometres) from Montreal. "The rates of autism in Montreal have as much to do with MMR vaccination rates in Quebec City as pollution in Los Angeles has with diesel buses in Chicago," he says. However, data on vaccination rates in the city of Montreal itself is available, and the statistics demonstrate that they have been increasing in line with the rise in cases of pervasive developmental disorders: MMR rates rose from 85.1 per cent in 1983 to 88.8 per cent in 1996, and to 96 per cent in 2003.

Fombonne had attempted to disprove Wakefield in an earlier paper, which was also published in the journal Pediatrics. In that report, he stated that there was "no evidence for a new variant of measles–mumps–rubella-induced autism" (Pediatrics, 2001; 108: e58). However, this paper was eventually discredited by the prestigious and independent Cochrane Collaboration in a review

that found that “the numbers and possible impact of biases in this study are so high that interpretation of the results is impossible” (Cochrane Database Syst Rev, 2005; 4: CD004407).

One of the most significant papers on the subject was prepared by researchers from the Danish Epidemiology Science Centre at the University of Aarhus in Denmark, and is now referred to as ‘the Danish study’. This retrospective study, which tracked the numbers of autism cases recorded by the Danish Psychiatric Central Research Register from 1971 to 2000, and all outpatients cases seen by psychiatric departments since 1995, demonstrated that thimerosal could not have been a cause of autism because the preservative had been removed from vaccines in Denmark in 1992 and, yet, the rates of autism continued to rise during the years thereafter (Pediatrics, 2003; 112: 604–6).

However, critics of the report were quick to point out that the Central Research Register added data from outpatients clinics only from 1995 onwards and, yet, that is where 93 per cent of Danish children with autism go to have their diagnosis confirmed. Thus, for 14 of the 29 years of the study period, the principal source of autism data was excluded—and adding it so late in the study would obviously demonstrate a sudden increase.

In addition, it was also not revealed at the time that the Danish Centre had been hired by the US Centers for Disease Control (CDC) “to prepare a series of studies that would exonerate thimerosal . . . and the MMR vaccine from any role in causing autism” (The Copenhagen Post, 11 February 2010).

The media massages

Concerned parents cannot obtain clarity from their newspapers and newscasters either. One reassuring voice has been American paediatrician Ari Brown, whose pronouncements are published by the Immunization Action Coalition, which is funded by the CDC and by the vaccine manufacturers. According to the Immunization Action Committee, in her 2008 report entitled ‘Clear Answers and Smart Advice About Your Baby’s Shots’, Brown leans heavily on studies prepared by the CDC that demonstrate that thimerosal “had no significant effect on either intelligence or developmental delays in kids aged seven to 10”. In particular, one CDC study put 1047 children through a series of 42 neuropsychological tests that showed that they had not been developmentally impaired by vaccines (N Engl J Med, 2007; 357: 1281–92).

Nevertheless, the researchers’ conclusion is not supported by the evidence. Many of the boys had developed facial tics, one sign of neuro-psychological disturbance, and the reading skills of some of the girls was well below normal. The study group was also self-selecting, as only 30 per cent of the families invited to participate actually did so. But most concerning of all, the researchers were not looking for autism in the first place. In fact, these limitations were revealed by one of the study’s own panel members, who disassociated herself from the findings the following year (N Engl J Med, 2008; 358: 93–4).

What’s more, the CDC itself doesn’t always follow its own official ‘party line’. Its former director, Julie Gerberding, who resigned in January 2009 after the election of President Obama, told CNN’s

Sanjay Gupta that the MMR vaccine could cause autism in children born with mitochondrial disease, a condition in which cells fail to properly convert food and oxygen into energy. She reckoned this could happen in one in 50 children—or 2 per cent—so it wasn't a rare condition. Yet, despite this departure from the party line, Gerberding is now heading up Merck's vaccine division.

However, Gerderding's calculations are wrong. Around 20 per cent (or one in five) of all autistic children have mitochondrial disorders (Dev Med Child Neurol, 2007; 49: 726–33), and around half of the 4800 cases of post-MMR autism filed for possible compensation claims in the US include some degree of mitochondrial dysfunction (Medical Veritas, 2009; 6: 1907–24).

In the UK, the anti-Wakefield faction has been spearheaded by investigative journalist Brian Deer, whose articles in The Sunday Times sparked the GMC hearing. Since its conclusion, Deer has revealed that he was instructed by the newspaper in 2003 to "find something big" on the MMR controversy. By then, vaccine rates had fallen away in the UK as parents were concerned over the safety of the MMR and other childhood vaccines and, especially, by the possible link with autism. In 2007, Deer's immediate superior left the newspaper to take up a lucrative post as head of the UK's National Health Service website and, in 2009, James Murdoch, who has been heading up the UK and European division of News Corporation, which publishes The Sunday Times, became a board member of the drug giant GlaxoSmithKline (GSK), which manufactures the MMR vaccine (www.ageofautism.com, 3 March 2010).

The Sunday Times newspaper has not been alone in discrediting any doubts over the safety of the MMR vaccine. Many publications and TV channels have also done so, and it's virtually been open season on Wakefield once the GMC hearing began. But, according to a House of Commons select committee report, this is only to be expected. In its report, the health committee reveals that "considerable resources are invested [by the pharmaceutical industry] into building long-term, sustainable relationships with stakeholders and key opinion leaders and journalists. These relationships are used to promote the use of certain brands and counter concerns relating to safety. Efforts to undermine critical voices in particular were identified, under terms of issue management" (House of Commons Health Committee. The Influence of the Pharmaceutical Industry, Fourth Report of Session 2004–05, 2005; section 221, page 60).

Such a conclusion resonates with that of Dr Peter Fletcher, former Chief Scientific Officer at the UK Department of Health, who declared that if it is ever proven that the MMR vaccine causes autism, then "the refusal by governments to evaluate the risks properly will make this one of the greatest scandals in medical history".

He also said, in the Mail on Sunday (22 March 2006), that he has seen a "steady accumulation of evidence" that the vaccine is causing brain damage in certain children, but added: "There are very powerful people in positions of great authority in Britain and else-where who have staked their reputations and careers on the safety of MMR, and they are willing to do almost anything to protect themselves".

The case for autism

So, what is the evidence to which Dr Fletcher alludes? It's now established that many children with autism or autism-spectrum disorders (ASD) also have chronic gut inflammation, as Wakefield noted in 1998. Scores of studies have since witnessed the phenomenon, and one from the New York School of Medicine, which studied 143 autistic and ASD children, is only the latest to confirm these findings (Autism Insights, 2010; 2: 1–11).

But where's the evidence that the MMR vaccine—and especially thimerosal—may have triggered such inflammation? One important study from Vijendra Singh at Utah State University found antibodies in blood samples from 75 of the 125 autistic children tested that indicated an abnormal reaction to the measles component of the MMR vaccine. These antibodies attack myelin, the insulating tissue sheath that protects nerve fibres, thereby preventing the nerves from developing properly which, in turn, can affect brain function. Singh concluded that an abnormal immune response to the vaccine could be the cause of many cases of autism (J Biomed Sci, 2002; 9: 359–64).

In a later study, Singh confirmed that the measles element of the MMR vaccine was associated with increased antibodies in children with autism. He concluded that "autistic children have a hyperimmune response to measles virus, which, in the absence of a wild type of measles infection, might be a sign of an abnormal immune reaction to the vaccine strain or virus reactivation" (Pediatr Neurol, 2003; 28: 292–4).

Researchers at Tokyo Medical University made similar discoveries when they examined children with Crohn's disease, ulcerative colitis or autism, and found that some had signs of the measles virus in their gastro-intestinal system. In the cases of autism and ulcerative colitis, the virus had to have come from vaccines on the basis of genomic RNA studies of the viruses (Dig Dis Sci, 2000; 45: 723–9).

Other earlier evidence of a possible link—or a coincidental association—between MMR and autism also came out of Japan, which stopped using the vaccine combination in 1993. The data showed a rise in autism cases with the introduction of the triple vaccine that was followed by a decline as it was replaced by single shots (J Child Psychol Psychiatry, 2005; 46: 572–9).

Parents know best

Perhaps the most compelling evidence so far is from the parents themselves, who have witnessed the sudden, and catastrophic, decline in the development of their child immediately following an MMR vaccination. Typically, they report sudden fits and seizures, high fevers, gastrointestinal problems, and the loss of motor and verbal skills; their previously happy and outgoing child often becomes withdrawn and starts behaving strangely.

A survey of around 9000 parents in California and Oregon found a strong association between the vaccination and a range of neurological disorders such as ADHD (attention-deficit and hyperactivity disorder) and autism. According to a telephone survey that targeted the families of both vaccinated and unvaccinated boys, those who had been vaccinated were, on average, two-and-a-half times

more likely to have some neurological disorder compared with the boys who had not been vaccinated; also, they were 224-per-cent more likely to have ADHD, and 61-per-cent more likely to be diagnosed as autistic (Generation Rescue, 25 September 2007; www.generationrescue.org/studies.html).

It had also been the parents who, suspecting that the MMR vaccine had caused autism in their children, approached Dr Wakefield at the Royal Free Hospital in 1998 to investigate.

It was no coincidence that they chose Dr Wakefield, as he had already expressed concerns over the MMR vaccination by writing to Dr David Salisbury, head of the UK's vaccination and immunology unit, as early as in 1993. He had noticed a number of adverse reactions to the vaccine in children who came to his surgery at the Royal Free, and he feared that there could be a public-health crisis.

Paying up

The official line remains that vaccines in general, and the MMR in particular, don't cause autism. Yet, despite this widely held view, the US National Vaccine Injury Compensation Scheme has made 925 compensation payments to parents between 1998 and 2008 for claims that a vaccine was the cause of their child's autism. Some of the more public examples include the cases of Bailey Banks, whose parents, in 2007, were compensated after he developed autism following a vaccination, and Hannah Poling, whose parents were compensated after she developed autism after the MMR vaccine.

However, in the latter case, doctors have argued that Hannah was susceptible to autism because she had the preexisting condition of mitochondrial disorder. Her mother has the same condition, but with no ill effects. Writing in The New York Times in 2008, her father pointed out: "Our daughter, Hannah, developed normally until receiving nine vaccines at once. She immediately developed a fever and encephalopathy, deteriorating into autism".

Despite this public acceptance of culpability in the US, the UK's own compensation scheme, the Vaccine Damage Payments Unit, continues to refuse to pay out on any autism cases, as it continues to maintain that a causal link has not been proven.

But what does it mean to be proven? In an authoritative report, Donald Miller, a professor of surgery at the University of Washington School of Medicine, and Clifford Miller, a commercial lawyer, together argue that the evidence from parents should be enough to establish proof. America's drugs regulator, the Food and Drug Administration (FDA), is willing to accept the evidence from just one case that a drug causes a specific adverse effect as long as it is well documented and, yet, similar cases concerning the MMR vaccine are ignored. Instead, doctors want clinical evidence, which they regard as being 'scientific', but even this evidence can be biased, partial and manipulated, and can be as far away from being 'scientific' as an individual case study (J Am Phys Surg, 2005; 10: 70–5).

Summing up

Pity the parent who is trying to get to the simple truth about the MMR vaccine and autism. Following the GMC's verdict on the Wakefield case, the media was, as a chorus line, crowing that the autism argument was dead. In fact, the autism hypothesis was never on trial, and the principal defendant had never claimed it in the first place.

Worse, governments have been deliberately concealing evidence, scientists have been manipulating data and everyone seems to be trying to mislead the parents—all of which adds up to suspicious activity that suggests that there may well be something to the MMR–autism hypothesis after all. It's true that the evidence suggests a link, but it has not yet been established beyond reasonable doubt. The respected autism researcher Bernard Rimland says that "substantial data demonstrate immunity abnormality in many autistic children consistent with impaired resistance to infection, activation of inflammatory response, and auto-immunity". But he then sums up by saying: "We are far from certain that vaccines help trigger autism, but we are farther still from certain they do not" (Lab Med, 2002; 33: 708–17).

However, one thing is certain: demonizing Andrew Wakefield isn't helpful, and doesn't bring us any closer to the truth that we all have the right to hear.

More on thimerosal

The mercury-based preservative thimerosal is often fingered as the bad guy after it caused autism-like damage in the brains of laboratory mice, according to one research study.

The mice had been specially bred to have a vulnerability to immune system disorders, and lead researcher Dr Mady Hornig says that thimerosal may cause autism and other conditions in children whose immune systems are already compromised.

The findings, though welcome, raise two concerns: if thimerosal has been the problem all along, the MMR vaccine is not the culprit, as it doesn't contain any of the preservative. Thimerosal is found only in the DTP (diptheria, tetanus and whooping cough) jab, in the heptatis B vaccine and in some flu inoculations. There also has to be a question-mark, on both ethical and scientific grounds, over the use of mice or any other laboratory animal in the name of medical research. The latter, which will interest the GMC more, is a valid concern after several medical studies discovered that animal testing tells us virtually nothing about disease and prevention in humans.

Nonetheless, concerns have been raised about thimerosal in vaccines so many times now that you'd think it would be removed, if only as a PR exercise. The answer goes back to the real, underlying drive of modern medicine: money.

Mercury-free vaccines have a far shorter shelf life, and the health authorities and drug companies are concerned about the costs involved in constantly replenishing supplies. The process of removing mercury from existing stocks is also high.

As it is, mercury - one of the most toxic substances known to man - has been put in vaccines since the 1930s to a level of one part per 10,000. Its use has been stoutly defended by the US's Institute of

Medicine, the UK's Committee on Safety of Medicine, Europe's Agency for the Evaluation of Medicinal Products, and by the World Health Organization.

After all, think of the cost if it was found not to be safe.

MMR and autism: the missing link is found (again)

Health agencies were busy trying to limit the damage from one study that suggested a link between the MMR (measles, mumps, rubella) vaccine and autism. In the UK, where the vaccine is not compulsory, health spokesmen are claiming the study is not scientific.

Sadly for them, the study is effectively a simple piece of reporting, and is based on the cases of reactions to vaccines posted with the American Vaccine Adverse Events Reporting System (VAERS) from 1994 to 2000. Needless to say, the UK does not have a similar reporting facility.

Dr Mark Geier, from the Genetic Centers of America, and his son David discovered that the MMR vaccine was responsible for 133 reports of neurological problems and brain damage, and specific reports of 29 cases of autism.

The study raises several interesting questions that have been ignored by the international press. In the first place, the researchers found that the MMR vaccine was far more dangerous than the DTP (diphtheria, tetanus, pertussis) jab, and was five times more likely to cause autism.

Leaving aside autism, it's been long supposed that the DTP jab carries more risks than the MMR vaccination, which suggests one of two things: we've been wrong all along with this supposition, or that there's been some serious under-reporting.

This latter concern permeates all of medicine, but the true level of under-reporting is unknown, with estimates varying from 1 in 10 to 1 in 20,000 drug reactions ever being lodged. The reason is simple enough. If a doctor does not believe that a drug (or vaccine) can cause a reaction, because he believes it to be perfectly safe, then any case presenting a reaction will not be reported.

The other interesting point from the Geiers' study is the amount of evidence from previous studies, some going back to 1973, that has consistently shown the dangers of the MMR and other childhood vaccines. This, for us at WDDTY, has been the single most puzzling aspect of the whole MMR/autism debate, and, indeed, we were pointing out the likely link in 1989, years before Dr Andrew Wakefield published his landmark study.

The importance of the Geier study is to prove the link. The fact that the problem is far more prevalent is, perhaps, for another study.

Autism: the part that the MMR may play

In a study of 52 autistic children who had the vaccine, 43 of them had antibodies to the vaccine virus, which were not found in any of the healthy controls, including 15 siblings.

The researchers suggest 'autistic children have a hyper-immune response to measles virus, which in

the absence of a wild-type measles infection might be a sign of an abnormal immune response to the vaccine strain or virus reactivation.' In other words, the vaccine does not cause autism, but it triggers it in autistic children, who are hypersensitive to it.

Perhaps by blending the research about head and brain development, parents of potentially autistic children may be able to determine if their child should be given the vaccine.

(Source: Autism Research Review International, 2003; 17: 6).

* Researchers have discounted fears, especially among parents in America, that thimerosal in vaccines could cause autism. Thimerosal, which is 50 per cent mercury, is used as a preservative.

The researchers compared autism and vaccination rates in California, Sweden and Denmark, and found that, while autism rates continued to increase in all three regions, vaccines containing thimerosal had been removed in Sweden and Denmark by the early 1990s.

The needle and the damage done

Before it reaches its first birthday, a baby born in America will be given 26 inoculations as part of the most intensive vaccination programme in the world—and it is the least likely of any child born in a developed country to reach the age of one. This pattern is repeated in every nation with a concentrated immunization schedule, demonstrating a direct link between the numbers of doses given in the first year of life and infant death rates.

The US has the worst infant mortality rate of 34 countries assessed in a new research study, with 6.22 infants out of 1000 dying before the age of one. As around 4 million babies are born each year in the US, this means that 24,800 will die before their first birthday, and many could be the result of over-vaccination. This is the worst infant mortality rate of all the developed nations.

It’s a far different picture from that presented by the US National Vaccine Injury Compensation Program which, last year, accepted that only 107 children had died as a direct result of a vaccine, and paid out $110 million in compensation to the families.

Researchers Neil Miller and Gary Goldman,who carried out the study, believe that many vaccine-related deaths are being ‘reclassified’ to obscure any such association. They suggest, for instance,that some infant deaths attributed to ‘sudden infant death syndrome’ (SIDS) are the result of over-vaccination.

There is also evidence that the true harm that vaccines cause has never been published, and that drug companies and health regulators have colluded in the cover-up—possibly due to the belief that vaccines are a force for good, and that any harm they cause is far outweighed by their benefits.

However, there are two other possibilities for a cover-up. Any suggestion that multiple vaccinations could be harmful—or, worse, a killer—would spread doubt among parents who are always being assured by doctors that vaccines are safe, and compensation costs would put an enormous strain on

a public purse that is already being tightened.

Over-vaccination appears to be the major problem—as was seen among the soldiers who suffered from Gulf War syndrome after being given an accelerated cocktail of vaccines.

But there is something else that is being added to this already toxic brew. Former drug-company researcher Helen Ratajczak has discovered that 23 different vaccines given to infants contain human DNA. Of these, the polio vaccination, which is developed in human fetal tissue, is given to babies at the age of two months

Infant deaths

Miller and Goldman's research draws a direct line between the intensity of a nation's vaccination programme and its infant mortality rate. Close behind the US in their 34-nation survey is Cuba,which administers 22 vaccine doses to infants under the age of 12 months, and has a mortality rate of 5.82 per 1000 (see Factfile B, below). The UK also fares badly; its infants are given 19 vaccine doses in their first year, and it stands 25th in the table of worst infant mortality rates with 4.85 deaths per 1000.

Conversely, Sweden and Japan have two of the lowest infant mortality rates—2.75/1000 and 2.79/1000, respectively—and they include just 12 doses in their national vaccination programmes, the lowest in the survey.

On average, infant mortality rates were 3.36/1000 in nations that had 12–14 doses in their vaccination programmes, 3.89 for 15–17 doses, 4.28 for 18–20 doses and 5.19 for 24–26 doses (*Hum Exp Toxicol, 2011; doi: 10.1177/ 0960327111407644*).

The SIDS connection

If vaccines are a major cause of infant death, especially in the developed world, why hasn't this been picked up before? Miller and Goldman believe that other causes—especially SIDS—are being cited, and it is also possible that over-vaccination may be playing a participatory role in the deaths even if it's not the sole cause.

SIDS—or 'crib death', as it was once called—was such a rare phenomenon in the 1960s that it was not even included in the list of possible causes of infant death. Then, towards the end of the decade, a vaccination programme was introduced and, for the first time, American infants were required to have the DPT [diphtheria–tetanus–pertussis (whooping cough)], polio and MMR (measles–mumps–rubella) jabs. By 1969, a new cause of infant death—dubbed 'sudden infant death syndrome' or SIDS—had entered the medical lexicon, and it was sufficiently prevalent by 1973 to be included in the US National Center for Health Statistics. By 1980, it had become the leading cause of death among infants aged from 28 days to one year in the US(*Pediatrics, 2002; 109: 274–83*).

The average annual SIDS rate fell by 8.6 per cent between 1992 and 2001 following the success of the 'back to sleep' campaign, where babies were placed on their backs for sleeping. However, critics argued that this supposed decrease was achieved by merely massaging the figures. Other inexplicable causes of death among newborns—such as 'suffocation in bed', 'suffocation–other' and 'unknown and unspecified causes'—increased dramatically. Rates of 'suffocation in bed' alone rose by more than 11 per cent, and the overall increase in the other categories more than wiped out any reduction achieved by the campaign.

SIDS is defined as 'the sudden and unexpected death of an infant which remains unexplained after a thorough investigation' and, although specific symptoms are not detected, autopsies have often discovered congestion and oedema of the lungs, and inflammation in the respiratory tract (*National Center for Health Statistics. Vital Statistics of the United States 1988, volume II, Mortality, Part A. Washington, DC: Public Health Service, 1991*).

One study revealed that two-thirds of SIDS victims had been given the DPT vaccination. Of these, 6.5 per cent died within 12 hours of vaccination, 13 per cent within 24 hours and 26 per cent within three days. The researcher concluded that the vaccine "may be a generally unrecognized major cause of sudden infant and early childhood death,and that the risks of immunization may outweigh its potential benefits"(*Presentation at the 34th Annual Meeting of the American Academy of Neurology,April 25–May 1, 1982, Washington, DC*).

Doctors reassure parents that their babies can withstand multiple vaccinations—but their advice is at odds with biology. Vaccination programmes tend to start at the age of two months when the DPT, polio and the 5-in-1 DTaP/IPV/Hib jab are adminis-tered, but this is also a critical point in the development of the immune system. Although specific immune functions are competent, many cellular activities are not fully operational, and the overall immune system is compromised at that age.

Yet, this immature immune system is supposed to handle vaccines that have been grown in human fetal tissue, which introduces alien DNA into the body. The polio vaccine, administered to a two-month-old baby, is developed that way, as are 22 other vaccines. Helen Ratajczak, formerly a researcher with Boehringer Ingelheim Pharmaceuticals,discovered that the rubella component of the MMR jab and the chickenpox vaccine are both prepared with human DNA (*J Immunotoxicol, 2011; 8: 68–79*).

Overall, many millions of cell lines of vaccine have been developed from the lung cells of aborted human fetuses since 1961 in the US and 1966 in the UK—although this has never been revealed to parents when seeking their consent for vaccination. These living hosts are essential elements in the manufacture of antiviral vaccinations.

This throws up an ethical dilemma for pro-life parents, and it also presents a potential biological hazard. Swiss researchers at the University of Geneva discovered that RNA taken from frogs' hearts could interlink with bacterial DNA in a process known as 'transcession', where information is exchanged between two genetic materials (*World Medicine,1971; September 22, 69–72*). Dr Maurice Stroun, who headed up the study, said: "Since we know that no bacteria got into the frog hearts, we

can only conclude that the bacterial DNA must have been exuded from the bacteria and absorbed by the animal cells."

Other scientists have also observed such a process. In one study where a virus was passed through cell cultures 24 times, researchers noted regular insertions and deletions in the virus, suggesting that the virus exchanged genetic material with the tissues in which it was cultured (*Virus Res, 1987; 7: 335–49*). These results were replicated at a research laboratory in Geneva, where researchers introduced human cells into bacterial DNA (*Ann N Y Acad Sci, 2004; 1022: 195–201*)

Scientists speculate that trancession is the cause of heart damage following rheumatic fever and bacterial infections. Dr Howard Urnovitz, of the University of Michigan, who has studied genetic mutations caused by vaccines, argues that our body has a 'genetic memory' of foreign substances it encounters, including vaccines.

However, there is a limit to the amount the body can handle before genetic damage occurs or progresses to chronic disease. That limit varies from person to person, depending on his or her unique immune capability.

Urnovitz's theory would explain why over-vaccination could result in chronic disease or even death. As Dr Harold Buttram, a specialist in environmental medicine, has commented: "The implications of this work on transcession are enormous and reflect something that may be commonly taking place in human bodies. From the standpoint of future generations, the possibility that vaccines may be bringing about genetic hybridization in our children may represent far and away the greatest hazard of today's childhood vaccine programmes."

Other problems

Buttram, Ratajczak and others believe that the early introduction of alien DNA via vaccination into an immature immune system could be responsible for a range of chronic childhood conditions. American paediatrician Dr Kenneth Brock has coined the term the 'four-A disorders'—autism, ADHD, asthma and allergies—to describe the major problems that together affect around a third of all children in the US (*Bock K, Stauth C. Healing the New Childhood Epidemics. New York: Ballantine Books, 2007*).

Sudden, and sharp, increases in all four childhood conditions happened around 20 years ago, and coincided with the introduction of the MMR II and chicken-pox vaccines, which are both developed in human fetal tissue.

Between 1983 and 1990, when the take-up of the new MMR vaccine increased, the incidence of autism in the US spiked from four cases per 10,000 children to one case per 500 children. By 1988, two doses of MMR II were being given.

A similar pattern was seen in the UK where MMR II was used for the first time in 1988; in that year, autism rates jumped alarmingly to one per 64 children. Canada, Denmark and Japan reported similar

phenomena.

A second spike in autism levels happened in 1995 with the introduction of the new chickenpox vaccine, also developed in human fetal tissue (*J Immunotoxicol, 2011; 8: 68–79*).

Today, the autism rate in the US stands at one in every 100 children, and at one in 86 children in the UK.

Attention-deficit/hyperactivity disorder(ADHD) has increased by 400 per cent in the past 20 years, and affects around 3.5 million American children and 500,000 in the UK. Again, a similar pattern that coincides with the introduction of MMR II and the chickenpox vaccines can be traced. Over the same time period, asthma cases increased by 300 per cent and allergies by 400 per cent in children.

A cover-up?

Although the alarming explosion of cases of the four-A disorders correlates with the introduction of vaccines processed in human fetal tissue, it does not provide definitive proof of a causal connection.

Neurosurgeon Russell Blaylock, who has studied the impact of vaccination on children's neurological development, believes that researchers have never been encouraged to look for a link because no one even accepts the possibility. As the UK National Health Service emphatically advises parents on its NHS Choices website, "There is no evidence that having more than one vaccine at a time will adversely affect you or your child's health. There is also no limit to the number of vaccines you can have in your life."

On the very rare occasions that research has examined any possible reactions, the results may be massaged or lost. Dr Blaylock cites one occasion of a cover-up between vaccine manufacturers and health regulators when they were presented with evidence that the vaccines caused neurodevelopmental disorders and ADD (attention-deficit disorder).

In 2000, a private meeting was held between 51 scientists—including representatives from vaccine manufacturers—and US government health officials to discuss the alarming findings of a vaccine safety study prepared by Dr Thomas Verstraeten.

The study analyzed the reactions in 110,000 children from four regions, or health maintenance organizations (HMOs), after vaccination. In particular, Verstraeten and his research team were monitoring the effects of thimerosal, an ethylmercury compound that was used as a preservative in vaccines until 2000.

Astonishingly, the 'controls' for the study were children who had been given lower doses of thimerosal rather than children who had not been exposed at all.

The results were nonetheless worrying. 'Misery and unhappiness disorder'—where babies cry

uncontrollably and are fretful—was significantly higher in babies given a thimerosal containing vaccine at one month, and the disorder was worse in babies given the higher doses of the mercury. There was also a "significant increased risk" of ADD and, by three months, there was a clear increased risk of neurodevelopmental disorders, including speech problems (*Medical Veritas, 2008; 5: 1714–26*).

Yet, when the study was finally published three years later, the reactions had all but disappeared and the effects were described as "insignificant" (*Pediatrics, 2003; 112: 1039–48*). In those years, a fifth HMO—the Harvard Pilgrimage—was added to the study, but children receiving the highest dose of thimerosal were excluded and the study entry parameters were altered.

US Congressman Dave Weldon, who read the original study, told the Centers for Disease Control and Prevention (CDC) of his concerns about the inclusion of the Harvard Pilgrimage group as it was in receivership, and its records were "a shambles". Weldon wanted to release the original data to independent researcher Dr Mark Geier for reanalysis, but the CDC reported that the datasets had been "lost".

Verstraeten's own provenance was also ambivalent; in the published study, he described himself as an employee of the CDC and, yet, at the time that he was preparing the study, he worked for GlaxoSmithKline, the manufacturer of one of the vaccines being analyzed.

In his commentary, Dr Blaylock cautions against blaming thimerosal—it is now used only in flu vaccines—and says that the real culprit is the intensive vaccine programme itself. "Too many vaccines are being given to children during the brain's most rapid growth period," he writes (*Medical Veritas, 2008; 5: 1714–26*).

The path to hell

During the meeting with drug company representatives in 2000, the CDC's head of vaccine safety, Dr Robert Chen, stated that "the issue is that it is impossible, unethical, to leave kids unimmunized, so you will never, ever resolve that issue [of vaccine safety]."

Indeed, this belief would propel a cover-up of any damage, or even deaths, that the vaccines might cause. These children would be collateral damage—the unfortunate victims of a programme that benefits the vast majority, or so our health regulators believe.

But suppose that the intensive vaccine programme, and the way the vaccines are manufactured, combine to kill many thousands of infants around the world every year, and are also causing long-term chronic health problems in up to a third of our children—do the scales then shift and the harm begin to outweigh any benefits?

The path to hell may indeed be paved with good intentions.

Factfile A: Vaccines with human DNA

The following vaccines are produced with cells from aborted fetuses, containing DNA, proteins and/or cellular debris.

Vaccination	**Vaccine**
Polio	*PolioVax, Pentacel, DT Polio Absorbed, Quadracel*
MMR	*MMR II, Meruvax II, MRVax, Biovax, ProQuad, MMR-V, Priorix, Erolalix*
Varicella (chickenpox, shingles)	*Varivax, ProQuad, MMR-V, Zostavax, Varilix*
Hepatitis A	*Vaqta, Havrix, Twinrix, Avaxim, Vivaxim, Epaxal*
Rabies	*Imovax*

Source: *Sound Choice Pharmaceutical Institute*

Factfile B: The bottom 10

Here are the 10 developed countries, out of a selection of 34, with the worst infant mortality rates.

Position	**Country (no. of shots)**	**IMR/1000**
34	United States (26)	6.22
33	Cuba (22)	5.82
32	San Marino (18)	5.53
31	Italy (19)	5.51
30	Greece (23)	5.16
29	Ireland (23)	5.05
28	Canada (24)	5.04
27	Monaco (23)	5.00
26	New Zealand (17)	4.92

25	United Kingdom (19)	4.85

IMR/1000: *infant mortality rates per 1000 children; numbers in parentheses signify the number of vaccine shots given in the first year of life in the nation's vaccination programme*

Source: *CIA. Country Comparisons: Infant mortality rate (2009).*

The World Factbook (www.cia.gov)

Factfile C: Vaccines for the young

Infants in the UK are expected to have the following vaccine schedule by the time they reach their first birthday.

- **At two months**
    - The 5-in-1 (DTaP/IPV/Hib), to protect against diphtheria, tetanus, pertussis (whooping cough), polio and Haemophilus influenzae type b (Hib), first dose
    - Pneumococcal infection first dose
- **At three months**
    - The 5-in-1 second dose
    - Meningitis C first dose
- **At four months**
    - The 5-in-1 third dose
    - Pneumococcal infection second dose
    - Meningitis C second dose
- **By 12–13 months**
    - Meningitis C second dose
    - Hib fourth dose
    - MMR (measles–mumps–rubella) given as a single jab
    - Pneumococcal infection third dose

Source: *National Health Service*

Factfile D: The developing world

In the developing nations, the figures are far worse, as would be expected and, yet, the association between intensive vaccination programmes and high infant death rates persists. Gambia and Mongolia have a 22-dose programme and infant mortality rates of 68.8 and 39.9 per 1000, respectively. However, many of these deaths could also be caused by contaminated water, malnutrition and poor hygiene.

These other possible causes of death were taken into account in one study in Guinea-Bissau in West

Africa, which has one of the highest infant mortality rates in the world. The study involved 15,351 children, born between 1990 and 1996, who were monitored by Dutch researchers during the recommended vaccination programme. The children were given the polio and BCG (tuberculosis) vaccinations at birth, the DTP vaccination at age six, 10 and 14 weeks, and the measles inoculation at nine months.

The researchers found that the BCG and measles vaccines had beneficial effects, and halved the mortality rate. However, the death rate increased 1.84 times among children given the DPT and polio vaccines (*BMJ, 2000; 321: 1435–8*).

CHAPTER TWO

DIET AND AUTISM

Amino acid DMG helps in 42 per cent of cases

Children with autism can be helped by taking the amino acid DMG (dimethylglycine). The benefits of the supplement – especially for people with mental problems – have been known for years, but the evidence has either been anecdotal or the studies have been too small to interest other researchers.

The study, organised by the Autism Research Institute, recruited 5,367 autistic children – and 42 per cent of them reported major improvements in their condition after taking the supplement.

According to teachers and parents, the children who responded positively to DMG had improved verbal communication, better social interaction, better eye contact, improved affection, a reduction in seizures and improved sleep patterns.

One of DMG's long-time advocates, Dr Roger V Kendall, says that it helps the neurological system and can also modulate the immune system. It acts as a methyl donor, and methylation activates neural pathways that affect behaviour.

He recommends one to four 125 mg DMG tablets per day for an autistic child, and it should be taken with 800 micrograms of folic acid. DMG can also be found naturally in liver, and in beans, seeds and grains.

Diet is a trigger for autism and nervous problems

Your diet could be one of the most important factors in determining whether you suffer from anxiety, autism and nervous and behavioural problems. The food you eat reverses some of the worst symptoms, and researchers have discovered that it can also be a key trigger.

A diet that is high in sugar can cause abnormal behaviour such as hair-pulling, say researchers. The condition – trichotillomania – affects up to 4 per cent of the population, and happens more in women than men.

The researchers, from Purdue University in West Lafayette, Indiana, think the diet could also cause other behavioural problems, such as autism, Tourette's and skin picking.
(Source: Nutritional Neuroscience, 2010; 13: 256).

Autism is a gut problem – and can be reversed with a no-wheat, no-dairy diet

Autism can be improved – and even reversed – without drugs. Children just need to stop eating wheat and dairy, researchers have discovered – because the problem is related to the gut and immune system.

Children with autism may be more allergic, and have more gut problems, than other children – and this may be the key to reversing the problem, say researchers from Penn State.

When autistic children are given a gluten-free and casein-free diet – no wheat and no dairy - their symptoms improve. The Penn State researchers made the discovery when they asked 397 parents with autistic children to introduce a restricted diet. The parents reported big improvements in their children's social behaviour, language skills, eye contact and attention span.

Most doctors believe that autism is a neurological disorder, treatable with drugs.
(Source: Nutritional Neuroscience, 2012; February 16, 2012; doi: 10.1179/1476830512Y).

Autism: breaking through

There is no specific orthodox medical treatment for autism. Phenothiazines (such as chlorpromazine), which are given in order to dampen severely self destructive behaviour, do not reverse autism. Instead they frequently produce toxic effects in the central nervous system.

There is growing public fear that autism results from vaccine damage and isolated cases seem to support this Whether or not this is true, we do know that males with the familial "fragile X' syndrome, now shortened into the acronym Afrax (autism fragile X syndrome), are frequently autistic. Folic acid supplementation helps many, though not all.

Autism is strongly linked to food sensitivities. In one study, parents of autistic children taken off sugar (430 cases), cow's milk (417 cases) and wheat (222 cases) rated the elimination 52 per cent, 46 per cent and 44 per cent effective, respectively.

In homeopathy, the three time tested medications for autism are Chamomilla 6CH (keeps banging head on wall, upset by noise, restless, irritable); Hyoscyamus niger 6CH (suspicious of unfamiliar things, playing with genitals, mutterings); and Silicea 6CH (withdrawn, smelly, moist feel, nocturnal head sweats, sits on floor repeating the same action over and over). The British Homeopathic Research Group has published information on the successful pilot study of a clinical trial of homeopathy and autism. The remedy used in this case was Stramonium (marked and persistent disorder of the mental faculties without any pain).

With ear acupuncture, weekly soft laser stimulation of pathological points on the outer ear has been found to be beneficial.

Pyridoxine (vitamin B6) taken in combination with magnesium has an impressive experimental track record.9 Successes have also been reported by others in the use of vitamins B1, B2, B5, B15, C and E, as well as glutamic acid10, but none of these has been clearly demonstrated to be helpful.

Most studies measure improvements in terms of reduction of tantrums, increased alertness, improved speech, diminution of gaze aversion, better sleep patterns, greater sociability and acquiring self help skills such as dressing, toiletting, etc.

GAIA Multimedia, which produced the 1994 IBIS Chinese Herbs Programme, cite evidence for the use of two patented combinations of oriental herbs for autism in children: Liu Wei Di Huang Wan and Jia Wei Liu Wei Di Huang Wan.

Research has shown that by far the most effective psychotherapeutic approach is through behavioural treatment.12 Dr. Bernard Rimland, who was technical adviser on the movie Rain Man and is director of the USA's Autism Research Institute, maintains that recovery from childhood autism is possible, and he provides a list of books offering guidance for carers and parents.

Finally, there is Auditory Integration Training (available from a speech/language pathologist at the Hale Clinic, 7 Park Crescent, London W1). The autistic child usually has hypersensitive hearing and protectively tends to block out sound. In hourly sessions over ten consecutive days, some slightly strange music is played to such a child over earphones. The sound frequencies are isolated and electronically filtered with random emphasis by means of volume modulation. The effect is to make the brain pay attention, in the hope that sounds do not get blocked out any more. Instead the child receives them, which later leads to understanding communication and auditory information.14

The peptide connection

Paul Shattock and his colleagues first discovered the opioid-peptide connection with autism when studying the research on the behavioural effects of opioids, such as morphine, on animals. Other researchers then found that people with autism do indeed have higher levels of endorphin-like chemicals, such as beta-endorphin, a naturally occurring opiate (see main text).

Another key finding was that autistics have abnormal peptides in their urine.

Shattock’s team went on to discover that about half of the more than one thousand autistics they examined had elevated levels of opioid peptide. It is well established that casamorphins and glutamorphins produced by dairy products and gluten, respectively, produce opioid peptides (Brain Dys, 1990; 3: 323-34).

Children with ADHD and autism also often have a deficiency in the phenol sulphur-transferase (PST) enzyme system, making it difficult for them to metabolise certain foods, and detoxify chemicals containing phenols and amines (such as food additives and salicylates). Without this enzyme, children cannot process serotonin, dopamine or noradrenaline (norepinephrine) properly. Typical symptoms include excessive thirst, night sweats, facial flushing and reddened ears.

For a peptide urine test, contact Dr Robert Cade, at the University of Florida in Gainesville (tel: +[352] 392 8952) or the University of Sunderland Autism Research Unit (tel: 0191 510 8922). For PST testing, contact Dr Rosemary Waring at the University of Birmingham, Edgbaston, Birmingham B15 2TT.

Can autism be improved through diet?

A pilot study of autistic children studied the effects of removing gluten from their diet (Autism, 1999; 3: 45-69). In the study, once gluten containing foods were eliminated, a majority of children showed major improvements, particularly in language development, ability to concentrate and sleep patterns. The more severe the autism, the more pronounced the improvement.

Many children underwent an initial worsening of symptoms, which is not unlike the withdrawal 'masking' effects of allergies. This is likely because these children are akin to addicts suffering withdrawal symptoms; the food being removed from their diet produces opioids, which have dependency effects not unlike narcotics. In more than 50 per cent of cases at the Autism Research Unit, children have improved so much on gluten free diets that ordinary GPs have been willing to prescribe gluten free products on the NHS.

If your child has autism and you suspect bowel disorders or a link with the MMR vaccine:

Consider placing him or her on a gluten and dairy free diet (but work with a qualified nutritionist, so that your child doesn't suffer nutritional deficiencies)

Don't bother having him tested for allergies. Since the effects are due to toxicity, not allergies, his reactions to these foods won't show up on an allergy test

Consider keeping a food diary to see when his behaviour worsens. Experiment with withdrawal of certain foods to see if his behaviour improves (remember it will get worse before it gets better)

Feed your child an organic wholefood diet free of pesticides

Remove as many chemicals as you can from his environment. This includes perfumes, chemical cleaning products and toiletries with chemicals

Consider working with a homoeopath to minimise vaccine damage

For more information, contact the Autism Research Unit (School of Sciences, University of Sunderland, Sunderland SR2 7EE) or the Allergy Induced Autism Support Group (telephone 0121 444 6450 or 01733 331 771).

CHAPTER THREE

THE GUT AND AUTISM

Autism: it's all in the gut

The Autism Research Unit (ARU), University of Sunderland, has concluded that autism is not a mental illness, but a metabolic one.

In their research of more than 1200 children with autism over 11 years, they have evidence that autism is caused by the action of peptides outside the brain and central nervous system. These peptides result in effects which either cause opioid activity or help to break down the opioid peptides that occur naturally within the CNS. Natural opioid peptides, which include the enkephalins and endorphins, play a central role in regulating the CNS, affecting all high cognitive functions, like perception and emotion. Through the action of these peptides, the neuroregulatory role may be altered or intensified to such an extent that most higher processes within the CNS are completely disrupted.This interference would affect perception, cognition, emotions, mood and behaviour, leading to all the diverse symptoms we characterise as autism.

But where do these extra peptides come from? The ARU believes the culprit is certain foods and the inability of the body to process these foods due to an inadequacy of the enzymes ordinarily responsible for breaking them down. The most frequent causes are gluten from wheat and other gluten containing cereals, like rye, barley and oats, and also milk and dairy products.

Genetic factors or nutritional vitamin or mineral deficiencies may be behind the inadequate function of the enzymes involved.

These rogue peptides make it to the CNS largely due to a damaged gut. Normally, the proteins lining the gut wall are sulphated, forming a protective layer over the gut wall surface. But when the gut doesn't produce enough sulphation, proteins in the gut wall tend to clump together, causing an uneven gut wall surface and increasing gut permeability. This, in turn, allows foods into the bloodstream (and eventually the CNS).

Most of the children examined by the ARU have this abnormality in the gut. These gross gut wall abnormalities appear to be the result of an insult to the body or a toxicity. The ARU has evidence that one of the most common insults is the MMR vaccine (see box, p 3). Gut abnormalities and the onset of autism have also followed a bout of encephalitis or meningitis. Other environmental toxicities, such as pesticides, also appear to be implicated in damaging the gut.

Autism: - Could the gut play a part after all?

Despite the sterling efforts of the media, Dr Andrew Wakefield and his research into a link between the MMR vaccine and autism just won't go away. Sadly, the main point of his work - that there may be a causal link between gut disorders and autism - got lost in the furore over the vaccine, and yet it's something that may provide an invaluable insight into autism and its progress.

Dr Wakefield published a study that adds weight to the theory, irrespective of the part played by the MMR jab. The new study involved 178 children who suffer from gastrointestinal symptoms such as diarrhea and abdominal pain. Around 140 of the children also had autism, and most had regressed after normal early development. Only the children with autism had inflammation of the intestinal lining, and the degree of swelling of the intestinal lymph glands was also more severe. The study also

dispels the old medical myth that swollen lymph glands are 'normal' in children. "The results of this study give us additional clues on understanding what is going on in the gut and how it may lead to the brain disorder. The findings of this new study add to the clear evidence of a novel and treatable disease of the intestinal immune system in children with developmental disorders. These are medical diseases, which should be treated as such. This study, in combination with previous work, raises the possibility that treating bowel disease may alleviate some of the symptoms of autism itself," said Dr Wakefield. His theory, which is becoming increasingly likely with every study, could offer genuine hope for autism sufferers, and their parents and carers. For which he will doubtlessly be pilloried. (Source: European Journal of Gastroenterology and Hepatology, August 2005, and http://www.thoughtfulhouse.org/pub_06.htm)

Most autistic children have gut problems - so does MMR play a part?

Autistic children almost always have a gastrointestinal problem as well, new research has revealed. The discovery throws open the possibility that childhood vaccinations, such as the MMR, do, after all, play a part in the autism epidemic. Around half of all autistic children have gastrointestinal (GI) symptoms, such as diarrhea and constipation, and the prevalence increases as the children get older. In a study of 1,185 autistic children, researchers from the Autism Speaks' Autism Treatment Network (ATN) discovered that 45 per cent had GI symptoms, although the rate increased to 51 per cent in children aged seven and older. The children with GI symptoms also had a higher rate of sleep problems, behavioural issues and generally a lower level of good health. The English gastroenterologist Dr Andrew Wakefield discovered that children who had been given the MMR vaccination were also more likely to suffer from gut problems and autism. (Source: The Pediatric Academic Societies' annual meeting, Vancouver, British Columbia, May 2, 2010).

CHAPTER FOUR

DRUGS AND AUTISM

Major autism drug doesn't work, parents told

One of the most common drugs for autism is no better than a sugar pill, researchers have discovered.

Celexa (citalopram) doesn't prevent repetitive behaviour problems in autistic children, researchers conclude after testing it against a placebo, or sugar pill. Their findings also cast doubt on the drug's effectiveness in treating obsessive-compulsive disorder (OCD).

The researchers believe that parents may be better off stopping the medication. Although the drug is no better than a placebo, it does come with side effects, and so the risk outweighs the benefits of continuing treatment.

A research team from Seattle's Children's Hospital tested the drug on 149 children and adolescents aged between five years and 17 who had autism, Asperger's, or some developmental disorder. After 12 weeks, 32 per cent of the children taking citalopram showed improvements, but so did 34 per cent of those given a placebo.

(Source: Archives of General Psychiatry, 2009; 66: 583).

$10bn of antipsychotic drugs wrongly prescribed every year

People suffering from a range of problems - from autism, depression, and dementia - have been wrongly prescribed a class of drugs for more than 20 years that do more harm than good. Atypical antipsychotics – which include Seroquel (quetiapine), Abilify (aripoprazole) and Risperdal (risperidone) – cause weight gain, diabetes and heart disease, and yet do nothing to help the patient, say researchers.

The drugs came on the market in 1989 to treat schizophrenia, but were soon being used for a range of other problems, such as autism, bipolar disorder, delirium, dementia, depression and personality disorders. As a result, sales of the atypicals reached $10 billion in 2008, which represented 5 per cent of drug expenditure in the USA.

However, the drugs have been the subject of more lawsuits than any other drug family, and payments to patients and their families harmed by the drugs has reached more than $100 million, say researchers at Stanford University School of Medicine.

(Source: Stanford University Medical Center, January 7, 2011).

Autism is caused by our environment and antidepressants – not our genes

Forget genetics – most causes of autism are to be found in our environment, and especially when we are in the womb, say researchers. Antidepressants that our mothers were taking while pregnant are another cause.

More than half of all cases of autism are caused by environmental factors, and genetics accounts for just 37 per cent of cases, researchers have discovered this week – far different from the current model that puts inheritance as the primary cause, thought to account for 90 per cent of all cases. Researchers from Stanford University made the discovery when they examined the histories of 1,156 twins with at least one suffering from autism – which alone suggests that genetics has little to do with the condition.

One environmental cause could be antidepressants that were taken by the mother, especially during the first trimester. Researchers from Kaiser Permanente Northern California discovered that the drug more than doubles the risk of autism, especially if the mother was taking the drugs before conception or early in the pregnancy.

(Sources: Genetics study: Archives of General Psychiatry, 2011; doi: 10.1001/archgenpsychiatry.2011.76; antidepressants study: Archives of General Psychiatry, 2011; doi: 10.1001/archgenpsychiatry.2011.73).

Antioxidant curbs irritable behaviour in autistic children

The antioxidant supplement NAC (N-Acetylcysteine) lowers irritability in children with autism, and reduces their repetitive behavioural patterns. It seems to stop even extreme irritability, such as throwing, kicking and hitting.

The supplements were tested on 31 autistic children, and over the 12-week trial period, their irritability scores almost halved.

Researchers from Stanford University School of Medicine, who carried out the study, are hoping that NAC could be a safer and effective alternative to the antipsychotics currently given to curb the worst behaviour of autistic children.

(Source: Biological Psychiatry, 2012; 71: 956).

Drugs in the water supply could be causing autism

Antidepressants and other anti-psychotic drugs in the water supply could be a cause of autism in children, scientists suspect. Tiny traces of the drugs are in our drinking water, which might interfere with the developing fetus, and especially the genes associated with early brain development.

Scientists from Idaho State University have established that the drugs are triggering the genes in fish they tested, and they surmise the same could be happening in humans.

Pharmaceuticals are in the water system, including the water we drink, because filtration plants are unable to process them out. They get into the public water supply through human waste – the body

is able to break down only around 20 per cent of any drug – and because people throw the drugs down the toilet.

The research team mixed together the anti-epileptic drug carbamazepine with two SSRI antidepressants, fluoxetine and venlafaxine, at very low concentrations, and added them to the water in which fathead minnow fish were swimming.

After 18 days' exposure, the 324 genes specifically associated with autism had been altered – and yet other genes were unaffected.

The researchers' suspicions that the same could be happening in humans has been strengthened by earlier studies that discovered pregnant women taking an SSRI are more likely to give birth to an autistic child.

Two major drug groups cause autism

Women who take some prescription drugs while pregnant dramatically increase the chances of autism in their child. Antidepressants and the epilepsy drug Epilim (valproate) have both been associated with the learning problem this week.

All antidepressants, including the newer generation of SSRIs, triple the chances of the child developing autism. A study of 1,700 children with autism discovered that even the supposed 'safer' non-selective monoamine reuptake inhibitors were just as likely to cause the problem if the mother took them while she was pregnant.

Women who suffer depression when they are pregnant should seek out non-drug therapies instead, say the researchers.

In a separate study, the anti-epilepsy drug valproate (Epilim) increases the risk of autism "significantly" if it's taken during pregnancy. Autism is the latest in the list of serious effects to the unborn child, including congenital malformation and delayed cognitive development.

(Sources: BMJ 2013; 346: f2059 (antidepressants); Journal of the American Medical Journal, 2013; 309: 1696-703 (valproate))

Autism: another "treatable" condition?

Increasing evidence demonstrates that autism may be another environmental illness caused by drugs administered to a developing child. Dawbarns, the King's Lynn solicitors who represent many children allegedly damaged by the measles, mumps and rubella vaccine says that more than a third of all the MMR cases they are representing involve a child who was developing normally but then became autistic right after vaccination. Of the people reporting problems, 123 have reported autism twice as much as any other problem.

Although 350 cases are reported every year, suggesting that there should be 5600 cases among children from 1 to 16, 10,000 cases have been reported in one British county alone.According to a conference paper by Dr Sudhir Gupta of the Department of Medicine at the University of California, a study of autistic patients shows the "strong association between immunization with MMR and the development of autism (regressive autism). (See also J Autism, Development Disorders, 1996, vol 26 no 4.)

In America, a health professional has made a link with pervasive developmental disorder (commonly called high functioning autism) and at least three doses of broad spectrum antibiotics, such as Augmentin or Ceclor. In this case, the normal development of children is arrested overnight at between 18 to 30 months (Townsend Letter for Doctors, January 1995).

However, if these drugs interfere with immune function or certain developmental processes, there is also some evidence that nutritional intervention can help. At least 10 studies of vitamin B6 and magnesium have shown positive results (E Schopler & GB Mesibov, eds, Neurobiological Issues in Autism, New York: Plenum, 1987). Bernard Rimland of the Autism Research Institute surveyed 4000 parents of autistic children, rating various treatments, and discovered that the highest ranking treatment by far was the use of high dose vitamin B6 and magnesium, with more than eight parents reporting improvement to every one reporting a worsening of symptoms. Compared to the vitamins, thioridazine (Mellaril), came in fourth; only 1 and a half parents reported improvement for each parent noting a worsening (J Child Neuro, 1988; 3 (Suppl): S68-72). In another case, an infant suffering autistic like behaviour showed dramatic improvement in all symptoms, including seizures, after being given biotin twice daily (Epilepsia, 1989; 30: 573-8).

Other researchers are investigating individual nutritional approaches, including folic acid for autistics with fragile X syndrome; a low phenylalanine diet for those with phenylketonuria; restricted purine diet for purine autism; high calcium diet for autism with hypocalcinuria; and a ketogenic diet for autism with lactic acidosis (Clin Nutri, 1989: 8: 210-2).

For more information contact the Autism Research Institute, 4182 Adams Avenue, San Diego, CA 92116 Tel: 619-281-7165.

Antidepressants for autism do more harm than good

Children with autism are regularly given antidepressants – but it’s a therapy that doesn’t work, and exposes them to serious adverse reactions such as an increased risk of suicide. There’s no evidence that SSRI (selective serotonin reuptake inhibitor) antidepressants help children with autism, say researchers from the Cochrane Collaboration after they studied seven trials that involved 271 patients. The drugs are more likely to do harm than good, and the Cochrane researchers report one case of a child who suffered a prolonged seizure after taking one of the drugs.

(Source: http://www2.cochrane.org/reviews/en/ab004677.html)

SSRI antidepressants cause miscarriage and preterm birth

Pregnant women often suffer from depression—but they shouldn't be given an SSRI antidepressant. The drugs can cause miscarriage, preterm birth, complications and long-term neurological problems, including autism, in the child.

Doctors should prescribe the drugs only with great caution, if at all, and should explain all the possible risks to the woman before she agrees to take an SSRI (selective serotonin reuptake inhibitor), say researchers from the Beth Israel Deaconess Medical Center.

The research team discovered that there is a very real risk for pregnant women taking an SSRI—and yet there is no evidence the drugs even help ease depression.

There's a strong association between pregnancy and depression, and an even stronger one among women undergoing infertility treatment, such as IVF. Around 11 per cent of women having treatment take an SSRI, and it may even be the drug that is reducing the woman's chances of getting pregnant.

If they do succeed, they are more likely to suffer a miscarriage, and their child could have congenital abnormalities, such as heart defects that have been associated with the SSRI, Paxil.
The biggest worry is preterm births, however. More than 30 studies have discovered a direct link to the drug.

(Source: Human Reproduction, 2012; doi: 10.1093/humrep/des383. First published online: October 31, 2012).

CHAPTER FIVE

ENVIRONMENT AND AUTISM

Autism: Pesticides on farms may be a trigger

Children who are exposed to agricultural pesticides while developing in the womb are six times more likely to develop autism.

The first eight weeks after conception seem to be the most vulnerable time, and the risk increases dramatically if, during that time, their mothers were living close to farms that had used pesticides, and especially dicifol and endosulfan.

Researchers from the National Institutes of Environmental Health Sciences in the USA made the connection after they studied the records of 465 children with autism who were born between 1996 and 1998 in California.

On average, the risk increased six-fold, although this varied depending on the amount of pesticides used and the distance of the mother from the farm. Women who lived within a 500-metre radius of the farm were at greater risk.

(Source: Environmental Health Perspectives, 2007; doi:10.1289/ehp.10168).

Autism: Is it caused by pesticides and household chemicals?

Autism – the condition that impairs children's social skills and development – is probably caused by pollutants such as pesticides, viruses and household chemicals, new research suggests.

Cases of autism in developed countries have risen dramatically in the past 15 years; in the state of California alone, 3000 new cases were reported in 2006 compared to just 205 cases in 1990.

Using statistics from the state, researchers has discovered that the numbers of cases continue to rise, and have yet to plateau.

Research team leader Irva Hertz-Picciotto, from the University of California, believes it is time to start monitoring toxins and pollutants in our environment, to which children and even fetuses are constantly exposed.

While some researchers believe genetics play a key part in the autism rise, Hertz-Picciotto says that the steep rise cannot be explained by genetic changes, which would become evident only on a much larger timescale. "The culprits are likely to be microbial and the chemical worlds," she said.

(Source: Epidemiology, 2009; 20: 84-90).

The biochemical connection

The broad-brush label ‘learning difficulties’ is used to describe any one of a number of symptoms: difficulty in reading and writing, a short attention span, poor concentration and an inability to retain information. The more severe learning disorders go by the labels ‘dyslexia’ (inability to process words), ‘dyspraxia’ (physical clumsiness), ‘dyscalculia’ (inability to process numbers), attention-deficit disorder (with or without hyperactivity) and even autism. However, more and more children with no obvious learning problems are struggling with the accelerated, fast-paced curriculum of today’s schools.

The diagnosis of learning difficulties is complex as the condition often results from disorders that may have several root causes and a wide range of other symptoms. A child may find it difficult to learn or retain information because of behavioural problems that may be due to as yet unidentified psychological or physical factors. The problems may also be the result of a physical handicap, such as poor hearing or eyesight, that has not yet been recognised in someone so young.

Nevertheless, an increasing body of evidence now shows that the root cause of so-called learning difficulties for the vast majority of children may be biochemical - something fundamental that is either lacking or causing a chemical insult to the body.

The simple and outrageous fact is that children labelled as ‘learning disabled’ may simply have extra needs for certain nutrients, or suffer from one or another food or chemical intolerances, causing a biochemical reaction in the brain. An inappropriate and medical-sounding diagnosis may label a child as somehow mentally defective for life.

Indeed, in many instances, it may be that modern medicine lies at the root of the problem - drugs given too early that have injured the bodies of these children, making them more susceptible to further chemical insults.

In the UK, some 2 per cent of children in the UK between 6 and 16 years of age are diagnosed with ADHD (69,000 severely so), 10 per cent are considered dyslexic (375,000 severely so) and 0.6 per cent are said to have an autistic-spectrum disorder. In the US and Australia, up to 10 per cent of children in both countries are labelled as ADHD. Some researchers estimate that as many as 20 per cent of children in both the UK and US are now considered hard-core problem learners.

In the case of autism, The Lancet presented evidence of a massive 1700 per cent increase in the incidence of autism between 1979 and 1992 (Lancet, 1999; 353: 2026-9).

The medical approach to disorders that give rise to learning difficulties are mostly treated as a social problem or a ‘sick brain’. Doctors tend to treat behavioural aspects with drugs to suppress symptoms and ignore the learning problems, often to the detriment of the child concerned.

Since the 1960s, the drug methylphenidate (MPH), more commonly known as Ritalin, has been prescribed to thousands of children. Currently, up to 20 per cent of all American school-age children, and 10 per cent of Australian children, are taking long-term prescriptions of this drug.

In the UK, this psychostimulant, which mimics the properties of cocaine, is a class B drug (class A when in solution). By 1999, the number of prescriptions being issued for Ritalin reached 131,000 per year, up from 6000 a year in 1994 - representing more than 2 per cent of all UK children. This figure

is likely to be a low estimate as it does not include the prescriptions given out in private practices, young-offender centres or care homes.

There is a lack of research to support the use of Ritalin to control ADHD, and a load of evidence pointing to a battery of worrying side-effects, including gastrointestinal and liver effects, drug dependency, agitation, abnormal thoughts and psychotic depression (Ethical Hum Sci Serv, 1999; 1: 13-33).

Despite this, US drug companies have successfully persuaded health authorities and psychiatrists of Ritalin's supposed benefits. In 1998, at a conference on ADHD, the US National Institutes of Health stated that there were 'no data to indicate that ADHD is due to a brain malfunction', despite the assertion by the Ritalin lobby that it works by correcting a 'brain disorder'.

With autism, the drug of choice is secretin, a polypeptide hormone involved in gastric function. Using this hormone for autism is based on sturdier principles than for MPH as it acknowledges the link between a malfunctioning digestive system and the condition. Secretin facilitates enzymatic digestion in the small intestine. It may, however, disrupt digestion in the stomach.

A common cause

Although ADHD, learning disabilities and autism are supposedly separate conditions, their similar symptoms suggest a possible common cause. Roughly half of all symptoms of ADHD and dyslexia overlap and, along with autism, they share a number of common physical problems - a tendency to allergies/sensitivities, skin problems, sleeping disorders and poor motor coordination.

Some pioneers in the field of learning disabilities have postulated that all have a common base: certain fundamental nutritional deficiencies because of higher-than-normal biochemical needs.

Sally Bunday, herself the mother of a hyperactive child, and her mother Irene Colquhoun were the first to hypothesise an association between nutrition and ADHD (Med Hypoth, 1981; 7: 673-9). They found a link between ADHD and asthma, eczema and other allergy-type conditions. These children also suffered from excessive thirst, and dry skin and hair, consistent with a deficiency of essential fatty acids (EFAs).

Their idea has since been verified by numerous studies concluding that an EFA deficiency is also a major factor in other, interrelated disorders. UK researchers have found further evidence that fatty-acid and membrane-phospholipid abnormalities are both involved in a range of neurodevelopmental and psychiatric disorders, including ADHD, dyslexia, dyspraxia and autism - illnesses that are now said to fall within a 'phospholipid spectrum' of disorders.

What this research suggests is that those who have so-called learning problems, as well as the more traditional mental problems, have a fundamental difficulty in processing fats and, therefore, need more of it than usual to function normally. This would explain the overlapping symptoms, the tendency to run in families and the symptom similarities with the more traditional psychiatric disorders (Prostagl Leukotr Essent Fatty Acids, 2000; 63: 1-9).

EFAs play an essential role in brain structure and function. Around 20 per cent of the dry weight of the brain and 30 per cent of the retina are made of highly unsaturated fatty acids (HUFAs). As EFAs cannot be synthesised by the body, they must be supplied by the diet in the form of linoleic acid and alpha-linolenic acid, precursors from which other fatty acids, such as docosahexaenoic acid (DHA), and compounds are synthesised that are vital to proper brain functioning, nerve synapses and photoreceptors. Deficiencies of these omega-3 fats have been linked to visual and mental problems (J Pediatr, 1994; 125: S39-47; Proc Natl Acad Sci USA, 1986; 83: 4021-5).

Role of wheat and dairy

Besides EFAs, some foods are virtual brain poisons to certain individuals. The Autism Research Unit at the University of Sunderland has conducted studies involving more than 1200 children, over an 11-year period, and found that autism is a metabolic disorder rather than a mental one.

The ARU researchers concluded that autism is the result of peptides outside the brain and nervous system causing opioid activity or the breakdown of the body's own opioid peptides. These naturally occurring peptides include enkephalins and endorphins, and play a key role in regulating brain and neurological function. Disruption of their activities may, in turn, affect perception, cognition, emotions, mood and behaviour.

In autism, the gut problems are caused by an initial insult - from the MMR vaccine, illnesses such as encephalitis and meningitis, or even an overload of pesticides. There is also evidence that autism can be caused by broad-spectrum antibiotics, possibly as a result of their effect on the immune system. Genetic factors may also predispose an individual to gut abnormalities.

The controversial research carried out by gastroenterologist Dr Andrew Wakefield at the Royal Free Hospital in London into the MMR vaccine revealed bowel abnormalities in a large number of 18-month-old children who developed the gut problems and autism shortly after receiving the triple vaccination. Urine tests also showed that these children had significant vitamin B12 deficiency, a vitamin necessary for brain and nervous system development (Lancet, 1998; 351: 637-41).

The theory proposed by Dr Wakefield and Paul Shattock, of the ARU, is that the MMR vaccine overloads the immune system, enabling a weak measles infection to become established in the gut. The bowel is then unable to produce sufficient enzymes to digest food properly and the gut becomes permeable or 'leaky', allowing short-chain amino acids from partially digested milk and wheat to pass into the bloodstream. Some of these molecules enter the brain, where they can interfere with neural functioning. This process can be exacerbated in a child who is low in EFAs, which itself can reduce immune function and cause digestive disorders.

When wheat and casein (the main protein in milk) are broken down in a baby's stomach, they produce casamorphins and glutamorphins.

'Casamorphins effectively drug the baby,' says Mr Shattock. 'That effect of milk and wheat on a baby's brain should stop when the child grows, but if it doesn't, we believe that conditions like autism and dyslexia occur.'

Removing dietary gluten and casein may offer a simple solution. In autistic children, removing gluten from the diet resulted in significant improvements in the majority of them, particularly in concentration, sleep patterns and language development (Autism, 1999; 3: 45-69). Many children suffered withdrawal effects, with many symptoms initially getting worse probably because of the loss of opioids (produced by gluten-containing foods), which had led to dependency effects similar to those seen with narcotics.

However, children with a damaged gut may not be the only ones to benefit from a milk- and gluten-free diet (see box above).

A toxic onslaught

Another area to consider is the modern child's increasingly toxic environment, combined with a diet of ever-decreasing nutritional value. Today's children are assaulted with heavy-metal pollution and additives in food. Exposure to lead, even at low levels, is associated with aggression and learning disabilities, as is exposure to mercury. Children nowadays come into contact with heavy metals through tapwater, air pollution, tobacco smoke, fish and shellfish, pesticides, children's vaccines (mercury-based thimerosol is a common preservative), processed foods and toiletries. Just tiny amounts stored in the body can have an adverse effect on health.

A wealth of evidence shows that toxic metals can compromise the immune system, and damage the nervous system and brain. Raised levels are associated with decreased concentration and organisational skills, problems with speech and language comprehension, and lowered intelligence. Metals are implicated in autism, dyslexia and ADHD.

Deficient food

Contributing to the 'dumbing down' of this generation is the poor state of our food. Nearly every study in the last century found that agricultural land, vastly overused and oversprayed with pesticides, is now depleted of minerals. The 1992 Earth Summit in Rio de Janeiro reported that US farmland was 85 per cent depleted of minerals while the overall worldwide depletion was 75 per cent. Manganese, zinc and iron were particularly low (FAO Soils Bull No 63, Rome, 1990).

It's not just minerals that are lacking. Modern-day crops of wheat are around 9 per cent protein compared with 90 per cent in 1900. US Department of Agriculture handbooks reveal that the vitamin content of fruit and vegetables has also declined across the board, with the beta-carotene in broccoli and the vitamin C in cauliflower both down 50 per cent since 1963.

Vitamins and minerals are important in brain chemistry, and a deficiency in only one can result in a diminished mental capacity, mental and emotional disturbances, behavioural disorders and autism (Int J Bio Soc Res, 1981; 1: 21-41). It is not unreasonable, then, to consider at least a partial link between the decline in soil nutrients and the rise in learning difficulties.

Poor nutrition sets up a vicious cycle - it leads to the increased uptake of toxic metals which, in their turn, further interfere with the absorption of essential nutrients like magnesium, zinc, lithium, iron

and the B vitamins. Brain cells, for example, absorb more toxic metals when the diet is low in calcium, iron, zinc, vitamin D and other essential nutrients.

What foods children do eat these days is often highly processed and filled with additives, many of which have proven links with conditions such as ADHD. One such additive is the artificial sweetener aspartame, which contains phenylalanine, a compound known to have a toxic effect on neurological functioning, with symptoms consistent with ADHD, if present at high levels in children. It can also affect children prenatally if ingested by the mother (Neuropsychology, 2003; 17: 458-68).

The best headstart for every child today, whether or not he is considered learning disabled, is a wholefood, unprocessed diet, rich in essential fatty acids, low in or free of gluten and dairy.

Autism - An environmental assault

Paul Shattock and his Autism Research Unit at the University of Sunderland have discovered that autism shares traits with Gulf War syndrome the result of catastrophic chemical overload

The usual medical view is that most autism is due to a genetic disorder, and with good reason. The existence of so many families where autism and related spectral disorders appear again and again is compelling evidence.

However, this is probably not the whole story. Even the strongest proponents of genetic research are now beginning to talk in terms of 'genetic fragility' or 'genetic predisposition'.

Genetic susceptibility is not a black or white, yes or no, issue. Taking the population as a whole, the genetic susceptibility to any form of illness is more likely to be in the shape of a

normal distribution curve. A few people will be immensely susceptible, the vast majority will be moderately susceptible and some will be immune whatever the size of the burden.

Incidence skyrocketing

Increasing reported levels of autism have been noted from many parts of the world, but this may reflect no more than an increasing awareness of the disorder and changing diagnostic criteria (Br J Psychiatr, 1998; 158: 403-9; BMJ, 1996; 312: 327-8).

However, two recent reports on autism and vaccination would suggest otherwise. One paper, by Taylor et al, showed a whopping 1700 per cent increase of reported incidence between 1979 and 1992 (Lancet, 1999; 353: 2026-9).

Another 1999 study report showed a 273 per cent increase in autism for the state of California over a similar period. Studies from the past 12 months indicate a continuing rise in the reported incidence (Changes in the Population of Persons With Autism and Pervasive Developmental Disorders in California's Developmental Services System: 1987 Through 1998, report to the State Legislature from the California Health and Human Services Agency, March 1, 1999).

Informal and unpublished data from many parts of the UK (Thrower D, Evidence presented to HM Government, 1999) and other parts of the world are showing similar increases. Although not

supported by official publications, parallel, staggering increases in incidence apparently are occurring in similar and related disorders such as dyslexia and attention deficit disorder (ADD), which may be combined with hyperactivity (ADHD). Indeed, reports from the US and Australia suggest that 10 per cent of school age children are currently taking Ritalin to ameliorate the symptoms of ADHD.

In other circumstances, such increases would be regarded as an epidemic and worthy of concern and considerable research. So far, environmental factors have been completely and utterly ignored by government funded agencies within the UK and throughout the world. If these increases are indeed genuine, then there must be factors, additional to the purely genetic, which trigger the problem.

Although there may be genetic elements or 'fragilities' involved in all of these situations, the fact that the increases have been so dramatic point to environmental factors.

Environmental agents

Numerous environmental factors have changed over the past 20 years in the UK. The use of lead paint has decreased dramatically, as has the use of mercury in pesticides and dental fillings. Asbestos has been largely removed from the environment, but there are increasing levels of aluminium in water and potentially toxic fumes and radiation from TV sets and computers.

One of the biggest changes is an increase in the use of attenuated strains or non infective versions of many diseases, introduced in the form of vaccines. At the same time, levels of mercury injected into infants in the form of preservatives (thimerosal) increases every time another infection is added to the list of recommended or mandatory vaccine programmes.

The other big change involves the fact that the older organochlorine (OC) insecticides have been replaced by those based upon organophosphorus (OP) compounds.

This leads us to a consideration of infectious agents and environmental chemicals, and their effects on the immune system, in what we have termed the 'opioid excess theory of autism'.

OP pesticides

When urine samples are taken from children diagnosed with autism and related disorders, a majority up to 80 per cent show increased levels of indolyl acryloyl glycine (IAG) in the urine, an abnormal metabolite of the amino acid tryptophan that may be created under certain conditions during tryptophan metabolism (Amino Acids, 1999; 17: 401-3).

As yet, there's no published evidence that IAG has any marked physiological activity (though this possibility is being investigated in our laboratory). But, given its molecular size and structure, it is likely that the only known precursor for IAG indolyl acrylic acid (IAcrA) possesses considerable potential for activity. In particular, it could become involved in the structure of cell membrane fats, greatly increasing their permeability to other molecules.

As far as autism is concerned, what particularly interests us is the effect of IAcrA on the permeability of the intestinal wall and the blood brain barrier. Increased permeability would permit the increased translocation of biologically active peptides from the intestines to the central nervous system.

In Hartnup disease and phenylketonuria (PKU), the cause of the increased levels of IAG in the urine is believed to be purely genetic, but there could be other reasons. Through our associated studies, we have found what appears to be elevated levels of IAG in certain other conditions, in particular, in those experiencing symptoms commonly known as 'Gulf War syndrome'.

At this time, we are investigating the possibility that OP based pesticides may be at least partly responsible for these abnormally elevated levels. Certainly, the US and UK forces deployed in the Gulf would have been exposed to such compounds, as are those suffering from 'sheep dip syndrome' ('fruit pickers syndrome' in the US). All of these individuals experience marked psychological as well as physical effects.

OP compounds were developed as agents of war ('nerve gases') and insecticides because of their ability to cause paralysis by inhibiting certain enzyme systems and, in particular, those involving anticholinesterases, thereby affecting the central nervous system and muscle control. OP compounds tend to be non specific in their actions and may affect other enzyme systems as well.

Most interesting in terms of autism is the effect of OP compounds on the enzymes involved in tryptophan metabolism (Biochem Pharmacol, 1992; 44: 2243-50; Eur J Pharmacol, 1993; 248: 237-41). Diazinon, an OP pesticide, has been reported to seriously interfere with the metabolism of tryp tophan via the kynurenine pathways, an intermediate amino acid in tryptophan metabolism. This, in itself, could be sufficient to push tryptophan metabolism towards producing IAG. If there are also effects on the enzyme tryptophan hydroxylase (which we are currently investigating), then this may be an additional impetus towards creation of the abnormal metabolite IAG.

The Gulf War only lasted a few days, but it was by far the most toxic war in history. In addition to the pesticides (mainly OPs) used by the allies to protect their troops and any which may have been derived from other sources, both troops and civilians were exposed to toxic products from burning oil wells. Soldiers had the additional burden of up to 12 separate vaccinations, some containing the mercury based preservative thimerosal, all administered on the same day. There was also the very strong likelihood that depleted uranium which, in spite of its name, is still radioactive was absorbed. In effect, our soldiers were exposed to all the main forms of modern contamination in combination with an unusually stressful and threatening situation. It would be astonishing if these individuals, given such exposure, returned from the Gulf War with their health intact.

The symptoms of Gulf War syndrome are similar (but not identical) to those seen in myalgic encephalitis (chronic fatigue syndrome). As with autism, the appearance of the symptoms might be explained by the combined effects of environmental factors, such as pesticides, and infections, which may be natural or induced through vaccines on individuals of varying genetic fragility.

Another line of evidence which points to a similar cause between the two syndromes is the reported usefulness of dietary interventions, specifically, elimination of gluten and casein. This has been shown in several studies to ameliorate some of the symptoms of Gulf War syndrome and other forms of autism (Autism, 1999; 3: 45-69) and is supported by personal reports at our own institution.

If this is true, increasing levels of OP compounds in the environment would, through a sequence of stages, result in increasing permeability of membranes of the intestines and the blood brain barrier as well as other membranes, such as those lining the respiratory organs. The increased permeability

of such membranes would permit the passage not only of peptides, but of slightly larger polypeptides or even protein material. These molecules could be large enough and present in sufficient quantities to cause antibodies to be produced which, in turn, generate allergies or hypersensitivities.

Thus, we could anticipate increased incidences of autism and its associated disorders as well as hay fever, hypersensitivities and afflictions of the intestinal tract. Bovine spongiform encephalopathy (BSE; Creutzfeldt Jakob disease) might be explained in this way.

It was soon after the switch from the older organochlorine to OPs (between 1979 and 1982) that these problems arose. BSE made its first appearance between 1984 and 1986, followed by 'new variant' CJD the human form a couple of years later. Interestingly, it is reported that the first victims of new variant CJD were farmers. Perhaps this was, as reported, because of their proximity to afflicted cattle, but it could also have been as a consequence of their intimate and frequent contact with OP pesticides. The damage from OPs would then have facilitated transmission of the disease.

There appears to be an increase in the incidence in autism and of many other disorders which, at first sight, are apparently unrelated. The increases are real and not merely the aftermath of improved diagnoses. If this is the case, environmental factors are certain to be involved. There are many possible factors, but two important common areas are the infectious products introduced by vaccination programmes and the wholesale use of OP insecticides.

But, with thousands of pesticides awash in the environment and dozens of vaccination jabs into the arms of infants, the genie is already out of the bottle. Only after an entire generation is exposed will we know for sure.

Paul Shattock

Paul Shattock is head of the Autism Research Unit, University of Sunderland.

ADHD: The importance of the EFAs

Deficiencies in the body's reserve or production of essential fatty acids (EFAs) is a major contributory factor in a range of interrelated childhood disorders, including ADHD, dyslexia, asthma, allergies and even autism, and that EFA supplementation is of value in a significant number of cases. The overlap of clinical features between ADHD and, for example, dyslexia is around 30-50 per cent.

Fatty acids play an essential role in brain structure and function. Two of them, arachidonic acid (AA) and docosahexanoic acid (DHA), play a major role in the brain and eye, constituting 20 per cent of the dry weight of the brain and over 30 per cent of the retina. Two others, eicosapentaenoic acid (EPA) and dihomogamma linolenic acid (DGLA), are crucial for normal brain development, but play a more minor structural role.

The absolutely essential EFAs that cannot be synthesised by the body, and therefore must be supplied in the diet, are linoleic acid (omega-6 series, to which DGLA and AA belong) and alpha linolenic acid (omega-3 series, to which EPA and DHA belong). Both AA and DHA are termed longer chain polyunsaturated fatty acids (LC-PUFAs) and can usually be synthesised from their EFA

precursors. The latter are critically important as they are precursors of a complex group of highly biologically active compounds, including prostanoids (prostaglandins, thromboxanes and prostacyclins, among others) and leukotrienes. These compounds perform numerous regulatory functions in the brain and the rest of the body.

Brain waves : The autism link

Mobile phones—and wireless technology in general—have been very much in the press recently, with some reports suggesting serious dangers from the technology, and others dismissing the problem as imaginary. For example, people who claimed to be electrosensitive apparently couldn't detect mobile-phone signals when put to the test.

A bomb-shell of a paper was published that raised the temperature of the issue to boiling point (J Aust Coll Nutr Environ Med, 2007; 26: 3–7). Wireless technology, it claimed, could be a major aggravating factor in autism.

That claim was made even more explosive by linking wireless radiation with heavy-metal poisoning, thus re-igniting the whole debate over whether or not vaccination can lead to autism.

WDDTY obtained an advance copy of this landmark study and this, together with an interview with its co-author, US-based scientist Dr George Carlo, forms the basis of this Special Report.

A tireless wireless campaigner

George Carlo is a controversial figure, and a major thorn in the side of the mobile-phone industry. Ironically enough, however, it was the wireless industry itself that propelled him from being a relatively obscure, albeit well-respected, epidemiologist to where he stands today: a world authority on the effects of wireless radiation, and a tireless campaigner against his former paymasters.

It all started in 1993, when the mobile-phone industry, with the support of several US government health agencies, gave Carlo and his team $28 million to investigate the safety of mobile phones and their transmission masts. Initially, he found no significant health threats from wireless technology. But, by February 1999, he had changed his mind, having by then seen evidence of damage to DNA, an increased risk of cancers of the eye, and certain types of brain tumours (see WDDTY vol 17 no 7).

Since then, Dr Carlo has developed what is probably the most sophisticated biological explanation of how wireless radiation can damage cells (see WDDTY vol 18 no 5, pages 20–1). In short, his theory is that 'information-carrying radiowaves' (ICRWs) in the low-hertz frequencies specific to mobile phones and their masts can interfere with normal cell function, causing the cell membrane to shut down in self-defence. Thiscan have disastrous effects, he says, one of which is the build-up of toxins within the cell. It was this theory that led him to autism.

The heavy-metal connection

In the last few years, a number of radical treatments for autism have been based on the idea that the condition is caused, or at least exacerbated, by the buildup of toxic heavy metals within the cells of the body. The non-medical press has tended to report this subject only in the context of the MMR

vaccine controversy initiated by British gastroenterologist Dr Andrew Wake-field when his research linked the vaccine to autism (see WDDTY vol 11 no 6). The heavy-metal connection is based on the theory that use of the mercury-derived preservative thimerosal in vaccines is the cause of autism.

However, there is now growing evidence that the autism–heavy metals issue may reach far beyond vaccines (see box, this page). This is because other metals besides mercury also appear to be involved.

Clinics have been springing up across the US, offering to treat autism by removing heavy metals from the body. The principal detoxification process used is chelation therapy, a technique that is often described by its detractors as controversial, but which has, in fact, been a well-recognized way to remove toxic metals from the body for more than 50 years.

Originally employed to treat industrial workers who came into contact with lead, chelation is an officially approved detox treatment for lead poisoning—even for children. DMSA (dimercaptosuccinic acid) is the most commonly employed chelating chemical, as it binds with all heavy metals in the blood, and comes with a good safety record.

How successful has chelation been in autism? One of the first doctors to experiment with the therapy was Dr Amy Holmes, a now-retired Louisiana physician. She put 85 young autistic children though a four-month chelation treatment and, by January 2001, a clear pattern had emerged: the younger the child, the more the benefit. In the under-six age group, 35 per cent showed “marked” improvement and 39 per cent “moderate”, with only 11 per cent of the children failing to respond at all.

However, these figures dropped dramatically in the six-to-12 age group, with only 4 per cent showing marked improvement, and 28 per cent achieving moderate benefit.

By age 18, the treatment had no significant effects whatsoever. “We have noticed a large dependence of excretion on age of patient, with the younger patients excreting much more mercury than the older patients,” says Dr Holmes. “We think this difference in rapidity of excre-tion may explain the differences in response between the various age groups” (Holmes AS. Chelation of Mercury for the Treatment of Autism. Published online 5 March 2002).

However, age may not be the only reason why metals fail to be excreted. Tamara Mariea is a clinical nutritionist who has used chelation therapy to treat autistic children at her Internal Balance clinic in Nashville, TN. Over the last seven years, she has treated more than 500 autistic children, with similar results to those of Dr Holmes. She, too, has found that some children fail to respond to the therapy because, again, it fails to clear metals from the body.

The heavy penny drops

When she met Dr George Carlo, the proverbial penny dropped. They both were asking the same question: could the electromagnetic (EM) fields from wireless technology be causing the children’s cell membranes to shut down, thus trapping the heavy metals within the cells, preventing them from being excreted and cleared from the body?

They chose first to test the theory on a 10-year-old boy with severe autism. For seven years, his parents had tried a variety of treatments, including chelation therapy, but nothing worked.

Carlo and Mariea decided on a drastic intervention programme designed to remove as many toxins as possible from the boy's environment. His home was turned into a toxin-free zone: chemical pollutants were banned, and mobiles, wireless devices and almost all electrical equipment were removed. Mariea's clinic, too, was also turned into an EM-free fortress, with all wireless technology forbidden, and electrical equipment shielded.

Gradually, as the boy was exposed to the EM-free environments, his hair and stool analyses began to show heavy metals being excreted from his body. His autistic condition was also considerably improved: from having only been able to utter the words 'yes' and 'no', he now began to speak. "The noise has gone from my head," he said to his parents. Buoyed by that result, Mariea then put 20 other autistic children through a similar regime, which mainly involved staying in the clinic's EM-free environment for four hours, two or three times a week. Remark-ably, after three months, heavy metals began to be cleared from the children's bodies—but not through chelation. It happened entirely spontaneously. "It is noteworthy that provocation doses of chelating agents were not used. The clinical goal was to assess the subjects' capacity to detoxify and clear heavy metals on their own," reported Carlo and Mariea in their joint 9 November paper (J Aust Coll Nutr Environ Med, 2007; 26: 3–7).

The study suggests that removing autistic children from EM fields has the same effect as chelation in removing heavy metals—a stunning conclusion which attracts the obvious criticism of being based on what is essentially anecdotal evidence. Carlo is the first to acknowledge that their study was not a proper clinical trial and, thus, cannot account for placebo effects.

However, there are intriguing data in their results which are difficult to ascribe to a placebo response. Carlo observed that the rate of metal excretion closely followed their molecular weights. He noted that the first metals to be eliminated were beryllium, aluminium and copper, followed by antimony, mercury, lead and, finally, uranium—in other words, from low to high molecular weights.

"This time- and molecular weight-dependent finding was determined post-hoc," says Carlo. "There was no operational knowledge of this by the subjects, parents or clinicians." This makes a placebo effect unlikely. There was also a difference in

the way the children responded to treatment. Some cleared more aluminium, others more beryllium. "This suggests there are possibly two categories of injured children: those exposed as a result of transgen-erational accumulation, and those exposed as a result of transgestational accumulation during fetal development," he says.

Another plank in the Carlo–Mariea argument is epidemiology. Over the past 20 years, there has been a dramatic increase in autism. In the 1970s, about one child in every 10,000 was diagnosed as autistic. By the late 1980s, however, that figure had begun to rise, and the upward curve has been climbing steeply ever since. Now, according to a February 2007 report from the US Centers for Disease Control and Prevention (CDC), a staggering one in 150 children suffers from an autistic-spectrum disorder. "It seems we now have an autism epidemic afoot," says Carlo. He admits that this huge increase could be partly explained by higher rates of detection of the disorder and by

mercury-based vaccines, but those two factors alone are not enough. The cause is more likely to be some major environmental assault which, itself, is also exponentially on the rise. The most obvious candidate in his view is mobile-phone technology, which has shot up from low levels in 1990 to a status today where about three in every four people own a mobile phone.

“Every one of those millions of mobile phones is connected to masts, creating a mesh in the environment of ICRWs, which are virtually impossible for anyone to avoid—even fetuses in the womb,” says Carlo.

“The mechanism appears to be this: children prone to autism have a biological deficiency in terms of methylation, meaning they can’t clear heavy metals efficiently. External exposure to wireless radiation exacerbates that problem by closing down the cell membranes, further trapping the metals, disrupting intracellular communication and leading to the cascade of symptoms we see in autistic kids.”

Protecting the future

However, this is not just a problem for the here-and-now—Carlo sees it extending into the future. His model of wireless radiation damage foresees long-term genetic damage, which was already presaged by a relatively unpublicized European Union report from three years ago, which found “gene mutations” in human cell cultures with levels of EM radiation below the current safety limits (Reflex, EU Contract: QLK4-CT-1999-01574, 31 May 2004).

“In both autism and electro-sensitivity in general, you have a genetic change induced by the environment,” says Carlo. “When the cell membrane is chronically exposed, the membrane closes down; the messenger RNA then picks up that information, folding in a manner consistent with a closed membrane; this is transmit-ted to the DNA in the mitochondria and nucleus. When the cell divides in mitosis, the daughter cells have a closed cell-membrane configura-tion, and this is transmitted to the succeeding mitoses, resulting in an embedded genetic change.”

Permanent cell damage may explain why chelation therapy sometimes fails to work in autistic children. “It’s only speculation, but the autistic patients who clear their heavy metals and yet have no improvement in symptoms are those whose cell membranes remain closed,” he says. “In such cases, chelation may actually worsen the damage, as the heavy metals can rip through the cell membrane.”

Carlo’s major concern is to prevent damage from mobile-phone technology in the future. He has begun a campaign called the Safe Wireless Initiative, primarily aimed at persuading policymakers to redesign the entire mobile-phone infrastructure and to develop shield technologies (see box above).

In the meantime, for autism in particular, he has some strong words of warning for mothers.

“We are very concerned about pregnant mothers,” he says. “Dur-ing embryonic development, the fetus needs exposure to environ-mental challenges like microbes, as they help to develop the immune system. However, exposure to ICRWs doesn’t enhance the immune system—it impedes it. It is not a good idea for pregnant women to be around these signals at all.”

All in the mind?

Most scientists believe the hazards of mobile-phone radiation have been exaggerated, with some even claiming that those who claim to be adversely affected by the technology are self-deluded hypochondriacs. A major study, published in November, appears to support this view.

Psychologists at UK's University of Essex tested 44 people who had reported adverse symptoms from mobile phones, exposing them to simulated mobile mast transmissions in a double-blind test. The subjects could neither identify when the mast signals were on or off and showed no changes in heart rate, blood pressure or skin conductance when the signals were on.

Lead scientist Professor Elaine Fox avoided labelling the subjects' symptoms as imaginary or psychosomatic, but concluded: "It is now important to determine what other factors [than mobile-phone technology] could be causing these symptoms, so appropriate research studies and treatment strategies can be developed" (Environ Health Perspect, 2007; 115: 1603–8).

Electrosensitive campaigning groups have criticized the study on a number of counts: some subjects were too ill to participate, and others may have suffered adverse effects during travel to the research centre. Indeed, the physiological data suggest that the subjects were in a constantly aroused state, whether the mobile signals were on or off.

Dr George Carlo also believes that such provocation studies are probably doomed to failure: any kind of experimentation creates a powerful 'nocebo' effect. "Electrosensitive people will have a parasympathetic response to any perceived threat, as they have a strong physiological memory of having been damaged in the past," he says.

His other major criticism of the study relates to the signal from the simulated mast radiation, which failed to include voice information. "It is the modulation of the signal associated with talking that creates the information-carrying radiowaves, which we know trigger the adverse effects," he says. "So, without talking on the signal, the biological pathway would not be triggered."

Autism and heavy metals

Although the medical authorities firmly dismiss any link between heavy metals and autism—especially in the context of vaccines—there is growing clinical evidence of just such a connection. Worryingly, much of it comes from research on the newborn.

Twenty years ago, research in the Middle East showed that mothers who ate mercury-contaminated bread gave birth to children with neurological problems such as "psychomotor retardation and seizures" (Arch Neurol, 1987; 44: 1017–22).

Among the first to discover the link with autism was US clinician Dr Amy Holmes (see main story) and colleagues. She studied hair samples taken from 94 autistic children at about 18 months of age. Compared with non-autistic infants, the damaged children had significantly less mercury in their hair, suggesting an inability to excrete mercury. "The lack of mercury in the children's hair could be due to the metal being retained in cells," says Dr Holmes. There was a clear dose–response relationship: the less mercury in the hair, the more severe the autism.

Where had the mercury come from? Holmes found that it had probably come from the mother during pregnancy: the mothers of the autistic children had more amalgam fillings, and had received, during pregnancy,

a Rho(D) immunoglobulin injection, which uses the mercury-based thimerosal, as found in vaccines (Int J Toxicol, 2003; 22: 277–85).

Rho(D) immunoglobulin is routinely given to Rhesus (Rh)-negative mothers with a Rh-positive fetus. US researchers have speculated that if the mercury–autism connection is true, there would be more autistic babies born to Rh-negative mothers who have had the injection—and that's exactly what they found. The medical records of nearly 1000 such mothers revealed a near tripling of autism-spectrum disorders in their offspring (J Matern Fetal Neonatal Med, 2007; 20: 385–90).

Another source of mercury in pregnancy is fish consumption. A Harvard study found that mothers who had eaten fish during pregnancy had more intelligent children at six months of age—almost certainly due to the omega-3 fats in fish. But if the mothers had inadvertently eaten fish with high mercury levels, the reverse was seen: their children showed impaired cognition (Environ Health Perspect, 2005; 113: 1376–80).

Pollution is another possible autistic factor. The California Department of Health Services recently surveyed the homes of children with autistic-spectrum disorders in the San Francisco Bay area, and found strong correlations with levels of mercury, cadmium, nickel, trichloroethylene and vinyl chloride in the ambient air (Environ Health Perspect, 2006; 114: 1438–44).

Further confirmation of the heavy-metal connection comes from two reports. One, from France, found strong evidence that autistic children have elevated levels of precoproporphyrin, "an atypical molecule" that is a specific indicator of heavy-metal toxicity, say scientists at the Laboratoire Philippe Auguste in Paris (Toxicol Appl Pharmacol, 2006; 214: 99–108). A University of Texas study found that levels of arsenic, cadmium, mercury and lead were lower in the hair of young autistic children compared with matched controls, indicating an inability to excrete the metals (J Toxicol Environ Health A, 2007; 70: 715–21).

How to avoid brain injury

Test for possible mercury poisoning by:

- ✓ MSMT (metal-specific memory T-cell) test
- ✓ Hair or sweat analysis
- ✓ EAV (Electro-Acupuncture according to Dr Reinhold Voll), a test based on acupuncture meridians
- ✓ Applied kinesiology.

Don't eat fish high in mercury, including:

- ✓ Chilean sea bass
- ✓ Grouper
- ✓ Marlin

- ✓ Rockfish
- ✓ Farmed Atlantic salmon
- ✓ Shark
- ✓ King mackerel
- ✓ Swordfish.

Consider having your dental amalgam fillings removed (but only by an expert).

Making wireless safe

The Safe Wireless Initiative proposes a series of practical steps to reduce levels of information-carrying radiowaves (ICRWs) in the environment.

- Change the infrastructure. Most mobile-phone mast transmissions are made not to mobiles, but to other masts. Linking masts via high-capacity fibreoptic telephone cables would reduce the present background ICRW levels by 85 per cent.

- Erect a network of low-power local antennas (nodes), and apply shielding devices to the nodes to reduce biological damage.

- Equip mobile phones with protective technologies. There are two main types of protective/shielding devices:

    - The noise-field system emits random low-power magnetic fields which attach to ICRWs, so when the signal reaches the cell, it doesn't resonate with the cilia on the cell membrane. The health benefits of adding electromagnetic 'noise' to microwave signals were first shown in laboratory studies a decade ago (Bioelectromagnetics, 1997; 18: 422–30), but the mobile-phone industry appears to have largely ignored the data. The leading noise-field device on the market is Exradia's Wi-Guard™, which embeds noise-field technology within the phone's batteries.
    - Sympathetic resonance. Some subtle-energy devices claim to have direct biological effects, allowing cells to communicate with each other. Two of the best known are Q-Link and ERT, although the evidence of their efficacy is limited.

Simple steps to reduce your exposure

- Choose a mobile phone with a low SAR (specific absorption rate)
- Use an airtube headset, not one made of wires
- Keep the phone away from the body while connecting
- Avoid using the phone when the signal strength is low, as the phone emits stronger radiation to make a connection

- Replace DECT phones with corded phones, especially by your bed
- Don’t use Wi-Fi in the office or at home. Use old-fashioned wired links to the Internet and other networked computers
- If pregnant, test your environment for wireless radiation with a kit such as the Electrosmog Detector (www.detect-protect.com/k/)
- Consider screening yourself and your home by sleeping under a mosquito net of fine metal mesh, and covering your walls with kitchen foil

CHAPTER SIX

AUTISM LINKED TO OTHER DISEASES

Asthma and autism linked to gi symptoms

Research from Italy suggests that asthma may share a fundamental link with gastrointestinal symptoms (Arch Dis Child, 2000; 82: 131-5). The researchers studied 75 children, aged 3-14 years, with bronchial asthma and compared these children with an age and sex matched control group.

Results suggested that children with asthma were 2.7 times more likely to have GI symptoms such as vomiting, diarrhoea and abdominal pain, and 4.4 times more likely to be experiencing symptoms at the time of the study. Among the various symptoms, abdominal pain was the most common.

The authors suggest that an abnormality of the GI tract might be present concurrently with asthma.

Evidence shows that more than two thirds of autistic children have an abnormal GI tract. This adds weight to the hypothesis that autism is a metabolic disorder and that the MMR vaccine may cause autism by damaging the GI tract (J Pediatr, 1999; 135: 559-63).

Autism: It may be caused by Lyme disease, and now even doctors think so, too

Lyme disease, the debilitating disease that's caused by a tic bite, may be a cause of autism. A group of doctors in America has agreed to begin preliminary investigations by finding out how many autistic children under their care also have Lyme disease, or Borrelia infection.

Parents of autistic children and alternative therapists have mooted the possible connection for several years, but it took on more of an official status after a 'think tank' was established during a conference last January.

Physicians who attended agreed to test their autistic patients for Lyme disease, and they intend to tell other doctors if they discover a connection. They suspect autism may also be caused by other infections, too.They hope to announce their initial findings at another meeting, which is planned for June.
(Source: Townsend Letter, 2007; 285: 26).

Autism: More evidence suggests a link to Lyme disease

Up to a third of all cases of autism may be the result of Lyme disease and other chronic infections, new research suggests.

Researcher Robert Bransfield believes that tick-borne infections, such as Lyme disease, can weaken the immune system during infancy and make the sufferer more vulnerable to autistic-spectrum diseases.

He estimates that between 20 per cent and 30 per cent of all autistic children may be infected by Lyme disease or other similar infections.

If so, it means that 140,000 autistic children in the USA alone have the problem as a direct result of an infection. If they were treated with high-dose antibiotics – considered to be the most effective therapy, especially in the early stages of infection – the savings in healthcare and education costs would amount to around $358bn, he estimates.

Lyme disease: a leaky brain

Lyme disease is still barely recognized by orthodox medicine, but new, explosive evidence links this worldwide epidemic with certain types of mental illness, including autism.

The first cases of Lyme disease (LD) occurred in the US, but it's now acknowledged to be a worldwide problem. Britain had its first official death due to LD in December 2005: "liver disease due to Lyme sepsis", according to the autopsy. In May of this year, a 38-year-old British pro-fessor committed suicide after developing dementia brought about by LD. It's particularly prevalent at this time of the year—late spring and early summer.

The number of diagnosed cases of Lyme disease are now rising—and not just because doctors are finally beginning to recognize it, but also possibly as a result of global warming. And, as with many new-disease discoveries, a whole raft of previously mysterious conditions are now being laid at the door of LD, including chronic fatigue (CFS/ME), multiple sclerosis (MS) and even autism. Could we be witnessing the start of a new epidemic? "Many of the diseases that are considered incurable by conventional medicine may have some kind of Lyme component," says American alternative practitioner Dr Lee Cowden.

What is Lyme disease? In essence, it's a kind of malaria, although it emerges not from the swampy jungle, but from temperate forests. Like malaria, the disease is transmitted by being bitten by a blood-feeding creature—in the case of LD, not by an insect, but a tick, an arachnid, that lives on animals such as cattle, birds and even mice, but primarily deer.

Where it all began

Lyme disease first appeared more than 30 years ago as a mysterious disease outbreak in an American town called Lyme, in Connecticut. In the spring of 1975, there was a cluster of cases of what appeared to be juvenile arthritis. Children as young as 10 began to develop severe joint pain. Doctors from nearby Yale University were called in to investigate, and were puzzled by the appearance of odd rashes on the children's skin. Months of detective work finally led the doctors to connect the symptoms to a disease that had first been described in Europe almost a century before as 'sheep-tick fever'.

After years of further detective work, researchers traced the illness to a rogue spirochaetes bacterium in the patients' blood known as Borrelia burgdorferi—hence, the alternative name of 'Lyme borreliosis'. But where had it come from? Already alerted to the fact that it might be due to a tick bite, the scientists began a hunt among the local animal population. The Borrelia microorganism

was finally tracked down to a tick of the genus Ixodes that lives on deer. This tiny arachnid—related to mites, spiders and scorpions, having eight legs—has a correspondingly tiny mouth, so its bite is rarely felt, which may be one reason why it was able to elude detection for so long. Ixodes is also cleverly able to inject its prey with a local anaesthetic, further disguising its attack. In fact, most victims of Lyme disease have no idea they were ever on the tick's hit list.

In fact, it's likely that Ixodes has to remain undetected because it's believed to be an inefficient feeder. It needs to be plugged in to its prey for hours to obtain sufficient nourish-ment. One indication of this is the probability that B. burgdorferi is not transmitted until the tick has been attached for at least 12 hours.

Initially, medicine treated the disease just like any other bacterial infection—with antibiotics. These appeared to work, and doctors patted themselves on the back for having put paid so easily to this novel disease. But the story hasn't turned out to be that simple.

Although this medical field is still relatively small, there is already a schism appearing among LD clinic-ians; indeed, some would call it a war. One army of experts believe that Lyme disease can be easily cured by a short course of antibiotics, whereas the opposing side says no, LD is a complex, potentially long-term illness (see box, page 6).
The problems begin with the diag-nosis. If LD is spotted early on, then antibiotics can prove helpful. But, in practice, LD turns out to be very diffi-cult to diagnose (see box, page 8), and the later stages of the disease are much harder to treat with the usual drugs.

What's more, these antibiotics can sometimes make things even worse. Any Borrelia bacteria that are not totally killed off by the drugs don't just develop resistance—which is bad enough—but also become what is referred to as 'cell-wall deficient'. This makes them very elusive as, without walls, they can hide inside of healthy cells, thereby avoiding direct attack by the drugs (Infection, 1996; 24: 218–26).

Lyme patients also find that the types of antibiotics used to treat them may actually exacerbate their symp-toms. This is thought to be the result of changes due to the drugs in the genetic sequencing of Borrelia, causing them to release toxins into the body. These toxins often get into the brain and nervous system, precipitating what is called the Jarisch–Herxheimer reaction (named after Karl Herx-heimer, the German dermatologist who first observed it). J–H reactions can be life-threatening, and are seen in one in seven Lyme borreliosis patients treated.

The leaky brain

In fact, it has also been suggested that LD in itself—whether treated by antibiotics or not—may be neurotoxic. The idea is that Lyme disease creates ammonia in the brain, causing a 'leaky-brain syndrome'. Among the first to propose the idea was LD specialist Dr David Jernigan. As ammonia can alter permeability of the blood–brain barrier, he says, it would allow large molecules to reach the brain, causing 'cerebral allergies'. Jernigan believes that this may be a major cause of a variety of LD symptoms (Townsend Lett Docs, 2007; April: 141–8; online only).

Confirmation of this hypothesis has come from animal studies. Using radioactive tracers, researchers have shown that laboratory animals, when infected by Borrelia, lose the pro-tection of the blood–brain barrier after just two weeks (Schutzer SE, ed. Lyme Disease: Molecular and Immunologic Approaches, Series 6. Current Communications in Molecular and Cell Biology. Plainview, NY: Cold Spring Harbor Press, 1992).

How does Borrelia do this? It's thought that the bacteria burrow their way between the cells of the brain's outermost membrane, causing a localized inflammation that, in turn, releases proteins to fight against the bacterial invasion; this then results in holes in the cerebral membrane. It's much the same mechanism as seen in the leaky-gut syndrome but, in this case, it's potentially more serious as it involves the brain.

In addition, there is now laboratory evidence that Borrelia can "attach to or invade human cortical neuronal cells", say researchers at the National Center for Infectious Diseases in Colorado, part of the US Centers for Disease Control and Prevention (CDC). This makes the bacteria difficult to kill by the immune system (Microbes Infect, 2006; 8: 2832–40). It also helps to explain why Lyme disease can be both relaps-ing and resistant to treatment.

Incidentally, the spirochaetes bac-terium that causes syphilis has a similar mode of action and can also lodge in the brain, potentially remain-ing active for years.

Brain abnormalities

The leaky-brain theory also accounts for some of the highly specific neur-ological abnormalities found in Lyme patients—including Bell's palsy, lymphocytic meningitis, meningo-encephalitis and cranial neuritis—not to mention the less specific CFS/ME and 'brain fog'.

"The neurological and psychiatric manifestations of Borrelia are so numerous that it is called the 'new great imitator'," says Dr Frederic Blanc, of the University of Strasbourg, France. "Every part of the nervous system can be involved: from central
to peripheral nervous system, and even muscles" (Med Mal Infect, 2007; Mar 8; Epub ahead of print).

In fact, as long as 10 years ago, LD was firmly characterized as a 'neuro-psychiatric illness'. Reviewing the whole history of the disease, a team of psychiatrists at New York's Columbia University found Lyme disease to be responsible for "a broad range of psychiatric reactions", including paranoia, dementia, schizophrenia, bipolar disorder, panic attacks, major depression, anorexia nervosa and obsessive–compulsive disorder (Am J Psychiatry, 1994; 151: 1571–83). Since then, tests have discovered reduced blood flow in the brains of chronic LD sufferers, explaining the impaired mental functioning that afflicts so many victims of the disease (Neuro-psychiatry Clin Neurosci, 2003; 15: 326–32).

The autism connection

The most dramatic mental condition thought to be caused by Lyme disease is autism. A rare condition 50 years ago, autism now affects one in every 150 American children, according to the latest figures from the CDC.

But why should Lyme disease be implicated? One of the first clues was that the psychological symptoms of LD are similar to those of autism.

Six years ago, the above-mentioned Columbia University psychiatrists found that children with Lyme disease have "significantly more cognitive and psychiatric disturbances . . . resulting in psychosocial and academic impairments" (J Neuropsychiatry Clin Neurosci, 2001; 13: 500–7).

There are other clues, too. As already mentioned, syphilis, which is caused by a similar spirochaetes as in LD, in the womb is known to cause autism. Furthermore, autistic children are known to have many metabolic dysfunctions which are shared by victims of LD, in particular, chronically low counts of CD57 natural-killer (NK) cells.

Of course, scores of theories have been proposed for the cause of autism, among which vaccine damage is perhaps the best known. But LD may be involved there, too. "It is possible that the two are conjoined in damage, and the long-term effects of Borrelia could hamper the body's ability to mount a significant, timely response to vaccines," says Dr Geoffrey Radoff, of the Alternative Medical Care Center of Arizona. "This could explain the higher incidences of adverse reactions to vaccinations in children with autism (Townsend Lett Docs, 2007; April: 78–81; online only).

However, some children appear to be born with autism, so how could Lyme disease be involved there? Although the research has yet to be done in humans, studies of farm animals have shown that Borrelia can pass through the placental barrier into the womb and even into breast milk. This makes it possible for an infected mother to pass on the disease to her newborn child, in whom it could present as autism.

Do the numbers stack up? With autism now so widespread, is it likely that so many children—or their mothers—could have been bitten by a relatively uncommon tick?

One answer is that ticks, it appears, are not the only cuplrits. Mosquitoes, fleas and lice may also carry Borrelia (Agric Environ Med, 2002; 9: 257–9), thus vastly increasing the risk of infection. Another theory is that there may be a 'Borrelia-related complex' wherein the bacteria pass unnoticed from generation to generation, and only present when the immune system is under stress. Autistic children are known to suffer from a plethora of autoimmune and metabolic disorders (J Autism Dev Disord, 2000; 30: 475–9), and these could turn latent Borrelia infection into a full-blown attack—with no tick in sight.

Such theories were aired at a 2007 meeting of the newly formed Lyme-Induced Autism Foundation, held in San Diego. Texas physician Dr William Harvey reported that he had many patients who tested positive for Borrelia, and yet, “our part of Texas is not an endemic region of Lyme disease”, he said. “No patient had the typical skin rash, but most had been ill for many years, with similarly ill family members.”

Other delegates agreed. “There may be two forms of Borrelia infection: Lyme disease and epidemic borreliosis—disease spread directly between humans,” said fellow LD physician Dr Radoff. “It is quite possible that the prevalence of autoimmune disorders found in families with autism is an infection that has existed chronically in the body for years, if not decades.”

Dr Warren Levin, another LD practitioner, has reported that, in the 10 children with autism he has seen, all tested positive for Lyme disease.

Predictably, medicine’s knee-jerk reaction to such findings has been to dismiss them, but one group of researchers is taking them seriously. Yet again, that pioneering team of psychiatrists at Columbia University, led by Dr Brian Fallon, has already taken up the challenge and embarked on a huge epidemiological study of Lyme disease and autism.

Fallon believes that two things will emerge from his study: that regions with very high rates of Lyme disease will also have higher-than-normal rates of autism; and that at least some of those autistic children will respond to LD therapy.

“In our work with children with LD, we have encountered a few children with autistic-like disorders,” says Dr Fallon. “When they received intensive antibiotic therapy, the autistic syn-dromes dramatically improved and, in some cases, resolved.”

Dangerous masqueraders

Most of the children studied by Dr William Shaw, former head of the toxicology laboratory of a major midwestern children's medical centre and now with the Great Plains Laboratory in Overland Park, Kansas, are diagnosed within the autistic spectrum. In most instances their urine organic acid analysis shows abnormal concentrations of blood sugar and a few compounds that closely resemble one of two categories of human molecules: neurotransmitters and citric acid cycle intermediaries.

The citric acid cycle is the biochemical machinery in which glucose molecules are disassembled to release energy. Interference with the metabolic fire cannot only result in an inefficient energy production, but the raw materials needed for other body processes may run short. The other body process that is heavily dependent on raw materials for making new molecules is detoxification, so that blocking this cycle interferes with the body's waste disposal system.

One of the compounds that Dr Shaw kept turning up is called 3-oxoglutaric acid. It is a very close look alike to 2-oxoglutaric acid (also called alpha keto glutarate or AKG). The two molecules resemble each other so closely that one could be easily mistaken for the other, and indeed that is

what happens in these children. This is highly significant, because of all the multi use molecules in the body, AKG is everywhere helping to rearrange, build and take molecules apart.Dr Shaw's work shows that some individuals, particularly children with autism, have very large amounts of di-hydroxyphenylpropionic acid in their urine and that this molecule is made by certain bacteria in the intestine. This look alike to a neurotransmitter is just one example of the way that intestinal germs, not properly detoxified, can produce molecules that resemble our own and can wreak havoc.

CHAPTER SEVEN

PARENTS AND AUTISM

Autism: The one tell-tale sign to look out for in your child

There's one tell-tale sign to look out for in your toddler if you want to know if he or she is autistic.

Scientists have discovered that the autistic child won't look at somebody's eyes, but will instead concentrate on the lips and mouth.

They made the discovery when they played 10 different videos to groups of two-year-olds, some of whom were autistic.

The films all featured close-ups, and the autistic children were far more likely than the healthy controls to look at the lips, and not at the eyes, of the actresses.

Parents who are more likely to have children with autism

Researchers have made a major breakthrough in predicting which parents are more likely to have a child with autism. They've discovered that cases of autism seem to occur in neighbourhood clusters where people with higher-than-average levels of education tend to live. It's already known that better-educated people are more likely to have a child with an autism spectrum disorder, and they tend to gravitate to specific neighbourhoods, as researchers discovered when they analysed various regions of California. As a result, rates of autism were twice as high as those outside of those areas, they found. (Source: Autism Research, published online, 4 January 2010; doi: 10.1002/aur.110).

If your child has learning difficulties

* Test for allergies, metal poisoning and other toxins such as pesticides, except in cases of autism. (The effects of autism are due to toxicity of foods, rather than allergies per se, and the tests won't pick up any reaction.)

* Test for nutritional deficiencies such as in EFAs, zinc, iron and certain amino acids. (Biolab in London performs such tests; tel: 020 7636 5959).

* Consider putting your child on a gluten- and dairy-free diet. Work with a nutritionist to ensure that the diet is nutritionally balanced.

* Remove refined sugar from his diet. Sugar can cause hypoglycaemia and raise adrenaline levels in children, which can worsen hyperactivity, irritable moods and poor concentration.

* Keep a food diary to see when behaviour worsens. Experiment with withdrawing certain foods to see if behaviour improves (bearing in mind that things may initially get worse before they get better).

* Feed your child an organic wholefood diet that is free of pesticides, phenol and amine additives, and salicylates.

* Remove as many chemicals as you can from the home environment, including perfume, cleaning products and toiletries.

* Supplement the diet with essential fatty acids (fish or flaxseed oil) and a good additive-free multivitamin/mineral. You may also want to add specific supplements such as: vitamin B6, zinc, magnesium and manganese for autism; zinc, iron and amino acids for ADHD; and zinc, lecithin and amino acids such as L-glutamine for dyslexia.

* Consider homoeopathic remedies. High-potency Thuja and Natrum muriaticum can help minimise vaccine damage and also improve dyslexia. (Consult a trained homoeopath; see our practitioner database at www.wddty.co.uk).

* Consider chelation therapy if heavy-metal poisoning is a factor in your child's illness. Chelation binds metals in the bloodstream to allow their removal from the body, using various chemical binders such as ethylenediaminetetraacetic acid (EDTA) via an intravenous drip, oral DMSO (dimethyl sulphoxide), MSM (methyl-sulphonyl-methane) and Chlorella (a type of algae).

* Consider desensitisation if your child has lots of allergies, including inhalant ones, using the intradermal neutralisation technique (INT), which tests for potential allergens and then uses a weakened dose to neutralise reactions. The parent administers this 'vaccine' to the child until he is eventually 'immune' to the substance (Allergy, 1977; 38: 3). Alternatively, try enzyme-potentiated desensitisation (EPD), which uses beta-glucuronidase, an enzyme released during an allergic reaction, combined with a minute amount of allergen to create an extremely low-dose vaccine to build up the body's defences gradually. Eight injections every two to three months is recommended.

The injection given depends on the allergens. A food mix may include a wide range of common foods and drinks, gut microorganisms and commonly used chemical food additives. As the vaccine supposedly strengthens immunity in general, reactions to substances not included in the injection may also improve (see www.wddty.co.uk for our practitioner database for clinical ecologists, who will do INT or EPD).

* Consider home-schooling or special-education programmes if biochemical measures don't improve things. Not all children learn at the same rate, and many who don't get on in a structured learning situation may thrive at home. For more information, contact Roland Meighan (Educational Heretics, 113 Arundel Drive, Bramcote, Nottingham NG9 3FQ; tel/fax 0115 925 7261).

Is my baby autistic?

Autism spectrum disorders (ASD) refer to a range of psychological conditions characterized by widespread abnormalities of social interactions and communication, as well as restricted interests and repetitive behaviour (World Health Organization. International Statistical Classification of Diseases and Related Health Problems, 10th edn (ICD-10). Geneva: WHO, 2006).

Identifying autism at an early age allows children to start treatment sooner, which can greatly improve their later development and learning. How-ever, many studies show a significant delay from the time that parents first report concerns about their child's behaviour and the eventual ASD

diagnosis, with some children not receiving a diagnosis until well after they have started school. However, a five-minute checklist (validated in 2002) that the parents of one-year-olds can fill out in the waiting rooms of their naturopathic physicians can help in the early diagnosis of ASD. This should reassure anxious parents where there are no such concerns, as well as lead to earlier treatment in cases where there may be reason for concern.

There is clearly a need for early ASD screening, and one study suggests that there is definite value in making systematic screening for ASD part of the 1-Year Well-Baby Check-Up Approach (J Pediatrics, 28 Apr 2011; doi: 10.1016/j.jpeds. 2011.02.036).

The CSBS DP Infant-Toddler Checklist comprises 24 questions under seven main headings—emotion and eye gaze, communication, gestures, sounds, words, understanding and object use—that are answered by ticking boxes for 'not yet', 'sometimes' and 'often'. Questions include, for example, 'Do you know when your child is happy or when your child is upset?' and 'Does your child smile or laugh while looking at you?' under 'Emotion and eye gaze' while, under 'Words', the parent/caregiver is asked 'About how many different words does your child use meaningfully that you recognize (such as baba for bottle; gaggle for doggie)?'

The answers form the basis of social, speech and symbolic composite scores, and total scores, for the infant/toddler aged six to 24 months, and is ultimately used to construct a percentile rank and developmental profile. Any child who fails the screen is referred for further testing and is reevaluated every six months up to the age of 3 years.

Of the 10,479 infants so screened, 32 were identified as having ASD. After the exclusion of late-onset and regression cases, this was consistent with the current rates expected at 12 months, according to the researchers. When those identified as having language, developmental and other forms of delay were included, the simple screen gave an accurate diagnosis 75 per cent of the time.

Following the screening, all toddlers diagnosed with ASD or developmental delay, and 89 per cent of those with language delay, were then referred for behavioural therapy. On average, the children referred for treatment were around age 17 months. In comparison, an earlier (2009) study using data from the US Centers for Disease Control and Prevention (CDC) found that, on average, children currently receive an ASD diagnosis at around 68 months of age, with treatment beginning some time after that.

In view of the virtual lack of universal screening at 12 months, this programme is one that could be adopted by any naturopathic practice at virtually no cost, and can aid in the identification of children who have true developmental problems.

Indeed, such a screening programme would be able to answer parents' concerns over their child's possible ASD symptoms earlier and with more confidence than ever before.

CHAPTER EIGHT

PHYSIOLOGICAL LINKS

Autism: does head size provide the clue?

Who are the children that may go on to develop autism? Researchers from the Center for Autism Research at San Diego believe that the autistic child is born with an unusually small head, and brain, and then experiences extraordinary head and brain growth.

Their theory is supported by their own research, based on a small group of 48 autistic children, and by earlier research. One study noted that 90 per cent of autistic children, aged between 2 and 3, had larger brain volumes than average and an abnormally large head circumference. Another study reported that brain size in 4-year-old children with autism exceeded the healthy average.

The new study by the Center confirmed these findings, but also discovered that the autistic child is more likely to be born with small head size. Sudden, and excessive, growth of the brain and head then occurs one to two months after birth, and again between six and 14 months.

These growth spurts happen long before autistic tendencies - such as delayed speech, poor attention and unusual social behaviour - start to appear, which usually occurs during the second and third years of life.

But sudden head and brain growth is not the cause - it's just another indicator. Admittedly, only around 6 per cent of non-autistic children experience the same sort of sudden brain and head growth, but it's still a significant minority. Similarly, other studies suggest that the growth pattern happens only to 59 per cent of autistic children, so a sizeable minority have normal brain growth patterns.

So, while health authorities would love to seize on this new research to dampen down concerns about a link between autism and the MMR vaccine, this trial doesn't give them the let-out they're looking for.

(Source: Journal of the American Medical Association, 2003;290: 337-44).

CHAPTER NINE

SOME NUMBERS

Autism in the USA: Rates may be as high as 1 in 100 – just like the UK

Autism is on the increase in the USA. Latest figures just released reveal that the rate has reached an average of one case per 160 children, up from the one-in-200 estimate of the 1980s.

The situation could be worse even than the new figures indicate. In New Jersey, one child in every 100 is diagnosed with autism – which is similar to the rate recorded in the UK – while the average is reduced by figures from other states, such as Alabama, where just one in 300 children is reported to have autism.

Researchers from the Centers for Disease Control and Prevention (CDC) accept that the Alabama figures are a serious under-estimate, and reflect the fact that researchers didn't have access to school records there.

Researchers are unable to explain the reasons for the increase, other than improved reporting, which accounts for part of it.

And don't even whisper the word 'vaccination'.

(Source: New York Times, 9 February 2007).