

### **Search for a biomarker marker of PPS**

Biomarkers are biological signs of particular diseases which are a help in making a diagnosis. PPS is often referred to as a diagnosis of elimination. Many other diseases have similar symptoms to PPS making diagnosis of PPS complex. Doctors may disagree as to whether a patient has PPS. Post-Polio Health International (formerly GINI) has made a grant of \$US25,000 to a research team at the University of Arkansas to assist them in their search for a *unique signature, or disease biomarker, in the immune system of individuals with post-polio syndrome that would enable a more definitive diagnosis of PPS*. The Winter 2007 edition of their newsletter *Post Polio Health* reports that the team has *recently detected the presence of a distinct immune cell in the blood of individuals with PPS but not in healthy individuals, although the number of donors examined was small. The detected cells represent a recently described subtype of T cells, known as regulatory T cells (Tregs). The research award will fund a small pilot study that will determine whether development of PPS is associated with increased numbers of Tregs, and whether the Tregs found in individuals with PPS have unusual properties*. Joan Headley, Executive Director of Post-Polio Health International says that *a definitive test for PPS would not only help with diagnosis but would also help develop potentially more effective therapies*.

### **Murder of doctor heading anti-polio campaign**

Dr Abdul Ghani Marwat headed the Pakistani government's vaccination program in Bajaur near the Afghanistan border. Rumours that the campaign was a western conspiracy to sterilise Muslim populations are rampant in the area, often spread via radio or loudspeakers of mosques. In February on his way home from attending a meeting with local religious leaders about the need for children to be immunised, Dr Marwat's vehicle was hit by a bomb which killed him and injured three health workers. The following week 1,500 health workers in the region wore black armbands and went on strike to protest. The Pakistani *Daily Times* (20/2/07) quoted a Health department official as saying that the strike was to last three days *'to protest against the lack of security for health workers in the region. The health workers have also decided to boycott the three-day vaccination program beginning from Tuesday and they will take out a protest rally in Khar'* Local health officials said *some 140,000 children could be affected by the action*.

Some conservative religious leaders in Pakistan such as Maulana Fazullah are warning their communities that *finding a cure for an epidemic before its outbreak is not allowed in Sharia* [Islamic law]. *According to Sharia, one should avoid going to areas where an epidemic has broken out, but those who do go to such areas and get killed during an outbreak are martyrs*. Many of Pakistan's more moderate imams and scholars have issued a fatwa [religious ruling] encouraging vaccination. According to the *Hindustani Times* (11/3/07) the Pakistani Health Department is appealing to Hajis who have just returned from their pilgrimage to Mecca to persuade Muslim families to take their children to vaccination booths. The chief immunisation officer in the areas with the worst vaccination rates said: *It will create more impact on Muslim families when the Hajis will share their experience regarding mass-scale immunisation of children against polio, in Saudi Arabia and other Gulf countries*.

### **Good leg, bad leg**

Polio survivors whose lower limbs were affected by the disease almost always refer to their 'good' and their 'bad' leg. With the onset of the late effects of polio they often express shock and outrage at the way their 'good' leg is letting them down. Anne Finger, an American polio survivor has just published *Elegy for a disease: A personal and cultural history of polio*, a book which interweaves her own polio story with that of the disease. In it she describes her reactions to the diagnosis of PPS.

*I moved from the liminal space that straddled identities, my left leg in the world of the normals, my right foot in the world of cripples. My body, as well as my social identity, had been bifurcated: I had a good leg and a bad leg. Sometimes I personified those two sisters who were my lower limbs, my good girl and my bad girl, as Sonya and Claire. Sonya, the stalwart left leg, and Claire, the loose and giddy right one. Sonya might play the role of an exhausted mother or a beleaguered elder sister in a Russian black-and-white movie about World War II...And Claire? She was a flapper, swinging through life free and easy, never doing any work, just along for the ride...when I was having circulatory problems in my right leg, a doctor said to me, 'I can't promise that you're not going to lose that leg,' that had seemed perfectly apt. Claire was a gal who might go out for the proverbial pack of cigarettes one night and then---one thing leading to another and then another---get herself lost, never come home. As for Sonya---she was one of those overburdened women whom middle age hits like a body blow. After doing double duty all these years she sinks into her chair at the end of another hard day and sighs, 'I can't believe how tired I am...They did an X-ray---bilateral hip, and what do you suppose it showed? Well, frail Claire who's done sweet f---k-all all these years---clean and smooth. Does she show any arthritic changes? Ha! But me---I've just been worn down by it all. You can see it, right there in black and white...See. There's my suffering. Plain as day. No one can deny it.'* Finger's book, which is a very good read, was published by St Martin's Press, New York, in 2006. It is available from Amazon.com for \$US18.94 plus postage.

### **Billions saved by polio vaccination**

A research report has shown that the polio vaccination program in the USA resulted in *a net savings of over \$180 billion, even without including the large intangible benefits associated with avoided fear and suffering.* The authors found that the US invested over \$35 billion between 1955 and 2005 and will continue to invest billions into the future to pay for polio vaccination. They estimated that these historical and future investments translate into over 1.7 billion vaccinations and prevent approximately 1.1 million cases of paralytic polio and over 160,000 deaths, thus saving Americans hundreds of billions of dollars in treatment costs. Dr Stephen Cochi from the US Centers for Disease Control is quoted as saying, *This study documents the extraordinary power of vaccines not only as highly effective tools to prevent disease, disability and death, but to provide enormous economic savings to society.* The research was conducted by the Harvard School of Public Health and published in the journal *Risk Analysis* in December 2006. (Quotes from *Newswise.com* 19/1/07)

### **Airport search nightmare for polio survivor**

Diane Kirlin Murphy is an American polio survivor who wears two long leg braces, walks with forearm crutches and when she is at an airport uses a wheelchair. On a recent trip from San Francisco to Philadelphia she was told to wait at the security checkpoint. In a letter of complaint to the Transportation Security Administration (TSA) she described what happened. *After a full body pat-down, I was told I could not be cleared to fly until I*

*submitted to further inspection of my legs and braces...I was told to drop my pants, while they offered to hold up a sheet...At this point I refused. I cannot physically stand and drop my pants while maintaining my balance...The TSA would not give me my crutches or my handbag because I had not been cleared. I was told that I could not fly if I did not submit to the search and...that I could not go to the bathroom until I was cleared. By now I was swelling with outrage and in tears. I had no choice but to submit to the humiliating and demeaning search by two female security officers. They reluctantly agreed to allow the search to be conducted in an adjoining ladies room.*

TSA answered Diane's letter and offered a *sincere and deepest apology....An investigation of this incident ...revealed that they [the transport security officers] had applied the wrong procedure, explosive trace detection (ETD) sampling to your leg brace...Whenever a person wearing a support appliance alarms the walk-through metal detector, they must undergo additional screening. A visual inspection should be conducted on the exterior accessible area of the support appliance, the areas that can be assessed by a person lifting his/her pant leg, shirt sleeve, or raising a skirt to knee-level. If no area can be assessed, a limited pat-down will be conducted to ensure no prohibited items can be concealed. At no time during the process, should you be required to remove your support brace or remove your clothing....The exact screening procedure depends on whether the individual can stand and walk, only stand or not stand at all. TSOs are taught to offer a private screening for the pat-down inspection. ...Walkers, crutches, and canes that can fit through the machine must undergo x-ray screening...TSOs should have allowed you to have your cane once it had cleared to assist you during the screening process. This incident was reported in the Winter 2007 edition of Post-Polio Health and the correspondence is on their website [www.post-polio.org](http://www.post-polio.org).*

### **Australian polio survivor's iron lung Guinness record**

June Middleton of Melbourne has used an iron lung since she contracted polio in April 1949 aged 23. She relies on the negative pressure respirator for over 57 years and spends about 18 hours a day in the iron lung. In February she was presented with a Guinness World Record Certificate. June resides at the Austin Hospital's Bowen Centre. According to the press release June says her survival is '*amazing when you consider the doctors told my parents I w3ouldn't last 24 hours, and I still here 57 years later*'. *..The Guinness World Record may seem a dubious honour, but June sees her life as a major achievement.* June supports the Carlton Football Club and its captain was present at the presentation ceremony. June has a poster of the team on the inside lid of her iron lung and says that she '*sleeps with the whole Carlton Football team every night.*'

### **A use for 'tamed' polio virus**

In the March issue of the journal *Cancer Research* Dr Hidemi Toyoda and colleagues, of the State University of New York, reported their research into mice with neuroblastoma, one of the commonest childhood cancers. The researchers developed mice that were susceptible to polio, immunised them against polio, and then injected them with neuroblastoma cells. When the cancers had grown to about 170 cubic millimetres half of the mice were injected with a saline solution and half were injected with highly attenuated poliovirus on four consecutive days. Eight days later, the tumours in all the saline injected mice had increased in size significantly but the tumours in the mice who received poliovirus had reduced on average to 128 cubic millimetres. None of the polio injected mice showed any signs of paralysis. By 180 days after the injections the cancers in 9 of the 11 mice that were given poliovirus had completely

regressed. Six months later these mice were reinjected with neuroblastoma cells but none developed tumours. Dr Toyoda said, *This immunity against neuroblastoma acquired by the animals is still something of a mystery, one that we hope to address in future studies. But it is an encouraging sign since neuroblastoma are known to relapse quite frequently....A tamed polio virus represents a significant step in finding viral treatments that can kill tumors without harming patients. Effectively, we have harnessed a virus that was deadly in children, just a few decades ago, namely polio, and used an essential aspect of its nature to destroy a disease that is deadly today.* (Information from [www.medpagetoday.com](http://www.medpagetoday.com) 16/3/07).

### **New polio vaccine more effective in India**

On April 21<sup>st</sup> the British medical journal, *the Lancet*, announced research findings that a new polio vaccine, mOPV1, is more effective than the standard vaccine in protecting children in northern India from polio. The poor sanitation in India helps the spread of polio and the fact that children often have diarrhoea and other infections when vaccinated hinders the effectiveness of vaccination. mOPV1 is a high potency vaccine that was developed for and introduced into India in 2005. It only targets the most common strain of polio, type 1, as *the efficacy of trivalent vaccines can be diminished because different strains of poliovirus interfere with one another the body, sometimes producing immunity to one strain but not another.* There have been no reported cases on type 2 wild poliovirus in the world since 1999. The research shows that *the clinical efficacy of the monovalent vaccine in this difficult setting [India] is about three times that of the trivalent vaccine against type 1.*