AN OPEN LETTER
BY CONCERNED PHYSICIANS AND SCIENTISTS

STOP THE INDISCRIMINATE "FRIENDLY FIRE" PESTICIDE SPRAYING

EXECUTIVE SUMMARY

MASSIVE CHEMICAL PESTICIDE SPRAYING AGAINST MOSQUITOES CARRYING WEST NILE VIRUS WILL HAVE MANY SERIOUS DETRIMENTAL CONSEQUENCES, ESPECIALLY ON HUMAN HEALTH. THE RAMIFICATIONS OF SUCH ACTION WILL RESULT IN FAR-REACHING PUBLIC HEALTH, FINANCIAL, LEGAL AND OTHER PROBLEMS.

INDISCRIMINATE SPRAYING OF PESTICIDES, ESPECIALLY IN HEAVILY POPULATED URBAN AREAS, IS FAR MORE DANGEROUS TO HUMAN HEALTH AND THE NATURAL ENVIRONMENT THAN A RELATIVELY VERY SMALL RISK OF WEST NILE VIRUS.

THE OVERALL WELL-BEING OF OUR POPULATION IS DECLINING AND WILL CONTINUE TO DECLINE IF WE CONTINUE TO ALLOW OUR COMMUNITIES TO BE EXPOSED TO PESTICIDES. THOSE INDIVIDUALS WHO ARE MOST VULNERABLE IN THIS CHEMICAL ACTION AGAINST MOSQUITOES INCLUDE: CHILDREN, PREGNANT WOMEN, THE ELDERLY, CHEMICALLY SENSITIVE AND IMMUNOSUPPRESSED INDIVIDUALS, SUCH AS PATIENTS WITH AIDS AND CANCER, AND PEOPLE SUFFERING WITH ASTHMA AND OTHER ALLERGIES.

THERE SHOULD BE A WIDESPREAD AWARENESS OF THE FAR-REACHING PUBLIC HEALTH, ECOLOGICAL, ENVIRONMENTAL, ECONOMIC AND LEGAL RAMIFICATIONS OF SUCH MASSIVE SPRAYING. THERE ARE OTHER, SAFER APPROACHES THAT CAN BE USED TO CONTROL AND PREVENT THE WEST NILE VIRUS ENCEPHALITIS.

USING PESTICIDE SPRAYING TO PREVENT WEST NILE VIRUS ENCEPHALITIS MAY BE COMPARED WITH "FRIENDLY FIRE" – KILLING ONE'S OWN FRIENDS WHILE INTENDING TO SHOOT AN ENEMY.

We, the undersigned physicians and scientists, have a particular interest in the impact of chemical pesticides on human health, and in ensuring that there is a proper widespread understanding and awareness about this important public health issue.

We want to alert everyone to the little known facts published in peer reviewed scientific journals, which have far-reaching public health and legal consequences.

There is a widely accepted **erroneous belief** that **mass spraying** of pesticides **protects** the population against mosquitoes. In fact, the **opposite is true**: the mass **spraying** will result in a deterioration of public health by **exposing millions** of people **to "friendly fire" pesticides**.

Ironically, such spraying is **especially dangerous** to **those with impaired immunity for whose "protection" such spraying is mainly being done**.

The health impact of such spraying may affect not only those living in the area but, potentially, visitors and people living in other regions as well. It has been recognized that **even a single exposure can trigger manifestation of clinical symptoms in predisposed individuals. (1)**

Once **released into the environment**, the spread of pesticides **cannot be controlled**. Radioactively traced pesticides spread over the UK were detected 5-7 days later in the southern USA; traces of insecticides used in tropical areas were detected in the Arctic.(20) Global air currents, hurricanes, etc., can transport pesticides and other chemicals even to other hemispheres.(9,20)

The **inability to contain the impact of chemical weapons to a desired** geographical **area** was recognized already during World War I and was the **main reason why**, after World War I, the use of **chemical** weapons was **banned** by international agreement. (This fact is, unfortunately, generally not remembered.)

The **spraying** program poses **much more danger** to human health **than** the extremely small health risk presented by the **West Nile Virus** itself. **Even** people **bitten by** an ***INFECTED*** female **mosquito**, the carrier of this virus, **run very little risk of serious illness**.(2,3)

- As reported by the **Centers for Disease Control** (CDC), **Atlanta,** the **chances of a mosquito bite** resulting in West Nile Virus infection and **serious illness** is **extremely low.**(2)

- The *Question and Answer Bulletin* of the **New York City Department of Health** advises that, "*very few mosquitoes -- perhaps only one out of 1,000 -- are infected.* ***Even if*** *you are* ***bitten by an INFECTED*** *female* ***mosquito****, your* ***chances*** *of developing* ***illness*** *are* ***very small****.*"(3)

- **Dr. Gochfeld, Prof. of Environmental and Community Medicine** at the Robert Wood Johnson Medical School and School of Public Health reports(4) that, based upon **his experience** and other West Nile Virus epidemics, typically less than one tenth of one percent of people bitten by *infected* mosquitoes develop any clinical signs of disease; in other words **less than one in 1000 persons bitten by INFECTED mosquitoes** (see Appendix "A") will develop **some health problem**.

- Even those who developed **West Nile Virus related illness, usually only** have **mild forms** with headaches, muscles aches, skin rashes and swollen lymphatic glands. More serious infections may cause headaches with high fever.(2-4)

- **It is extremely rare for a person to develop encephalitis.**(2-4) Available information indicates that those who developed West Nile Virus encephalitis in the year 1999 (62 people, 7 died) and in the year 2000 (21 people, 2 died) were

elderly and **immunosuppressed**. These people were residents of New York City and the surrounding areas. One person was a Canadian visiting New York.

- Even in cases **where death was attributed to West Nile Virus infection, the cause of death may not have been West Nile Virus**. West Nile Virus positivity could be a coincidental finding because the cause of death may have been some disease process unrelated to the West Nile Virus. Thousands of individuals who had no symptoms tested positive for West Nile Virus antibodies, proving that they were exposed to the virus. They never became ill and were **not even aware that they were infected with West Nile Virus until they were tested**.(2)

Compared to the thousands of people who die each year of the flu (approximately 2,500 in the New York City metropolitan area alone), or the number of children who die of asthma, 9 people in the last two years combined, who tested positive for West Nile Virus and who subsequently died of encephalitis (mainly elderly and with impaired immunity) in a population with 10 million people – is an extremely small number.

THE VIRUS IS NOT TRANSMITTED FROM PERSON TO PERSON.(2-4)

The West Nile Virus is transmitted to humans by mosquitoes, not from person to person.(2-4) Female mosquitoes acquire the virus when biting an infected bird. The virus must be repeatedly transferred back and forth between infected mosquitoes and animal reservoirs (usually birds) before it poses a risk to humans.(2-4)

INEFFICACY OF PESTICIDE SPRAYING

Indiscriminate pesticide **spraying over an urban area is an ineffective and very dangerous attempt at controlling mosquitoes**, and thereby controlling the West Nile Virus.(2-4) The spread of West Nile Virus to birds in 61 of New York's 62 counties proves that pesticides spraying is not a successful method of control.

Additionally, not only will repeated **spraying fail to eradicate the mosquitoes**, the spray program **leads to** the survival of those **mosquitoes resistant to pesticides**. This resistance is passed on to new generations, leading to **endless cycles of increased pesticide spraying each year – the "pest mill"**.

Health officials in **New York** have already **announced** they budgeted over $200 million to continue the **spraying in future years**. This **offer** was **refused by** the **pesticide producers** because New York City did not agree to cover the future legal expenses against the pesticide suppliers from those who develop health problems after mass spraying.

Even the recommended mosquito repellent D.E.E.T. can have serious repercussions. In 1998, D.E.E.T. was found to cause seizures and even death in children.(32,33)

SAFE EFFECTIVE WAYS TO CONTROL MOSQUITOES DO EXIST, AS DESCRIBED LATER IN THIS OPEN LETTER.

IMPACT OF PESTICIDES ON HUMAN HEALTH

To properly **assess the impact of pesticides** on human health, it is not enough to view the aerial and truck **spraying** in isolation. It is necessary to take into account all **other sources of pesticide exposure** as well. The combined impacts of these various exposures and their interactions (known as "**synergistic effects**") can strongly increase the harmful consequences of spraying.(6-9)

Pesticide residues are found everywhere -- in air, water, soil, rain, fog, snow, food, livestock, wildlife, and body tissues of human beings. Chemical pesticides and other pollutants are constantly being woven into our bodies. They have been **detected in the body tissues of *EVERYONE* tested**, regardless of country, place of origin, residence, occupation, age, sex or social class.(9,18)

A joint United States/Canadian study has detected pesticides in the **amniotic fluid surrounding the fetus** in one third of human pregnancies.(11) Pesticides and other pollutants have also been detected in the **body tissues of children even before their birth and in the fluid surrounding the eggs of infertile Canadian women.**(9-11) All of these women were residents of major Canadian cities, without any special history of exposure to pesticides.

The long term and future impact of such exposure is not fully known because throughout the millions of years of our existence, humanity has never been exposed to chemical pesticides until recently.

It is known (6-31, 34-38), however, that exposure to chemical **pesticide residues**, especially if chronic, even at low levels, can **cause**:

genetic damage
birth defects
disruption of hormone regulation
defective sexual development
brain damage
Parkinson's Disease
allergies
exacerbation of asthma
cancer
and many other health problems.

Especially disturbing is the finding that **predisposition to cancer and other health problems due to genetic damage related to pesticide exposure,** may be **transmitted** by affected individuals not only to their offspring, but also **to further generations.**(9)

Even a single exposure to pesticides can trigger (5-31,34-38):

latent environmental sensitivities
allergies
chronic fatigue syndrome
behavioral changes such as irritability, anxiety, depression, aggressiveness and personality changes
concentration difficulties, memory and learning problems
hormone disruption
erectile dysfunction
loss of libido
other health problems.

New York Mayor Rudolph Giuliani stated that "Sometimes you've got to make tough choices and people get angry at you. ... The reality is that danger to human life is more important than birds, fish and insects." **What has not been taken into account is that the *danger to human health caused by the indiscriminate spraying of pesticides is far greater than the danger of acquiring the West Nile Virus from mosquitoes.***

In their book*, Chemical Eposures -- Low Levels and High Stakes* (4), Nicholas Ashford, Ph.D., J.D., associate professor of technology and policy at the Massachussetts Institute of Technology, and Claudia Miller, M.D., state (1):

"In a survey of 6,800 persons claiming to be chemically sensitive, 80 percent asserted they knew 'when, where, with what, and how they were made ill." Of the 80 percent, 60 percent blamed pesticides."

THE IMPACT OF CHEMICAL PESTICIDES ON IMMUNITY AND BRAIN

Although some pesticides have been banned or restricted because they were recognized as posing serious threats to human health, so far **little attention has been given to what may be the greatest danger of pesticides -- impairment of the human immune system.**(9-15)

The World Resources Institute's report (15) entitled **"*Pesticides and the Immune System*: *The Public Health Risks*,"** documents the impact of widely used chemical pesticides on the immunity of animals as well as humans. Their conclusion, based on an extensive body of experimental and epidemiological research from around the world is that:

> **Impairment of the immune system by chemical pesticides can lead to allergies, autoimmune disorders such as lupus and cancer. It may also lead to infections to which one may be normally resistant.**(9-15) **In other words, exposure to spraying with chemical pesticides may actually increase the risk of developing West Nile Virus encephalitis**.

The report by World Resources Institute presents **scientific evidence that pesticide-related health problems are much more serious than is generally acknowledged, and that the steps now underway to resolve this issue are far from adequate.**(15)

In 1999, **to quell mosquitoes** thought to be carrying West Nile Virus, **New York City** aerially **sprayed** Fyfanon ULV (**malathion**), a **potential cancer-triggering pesticide**. The NY State Department of Environmental Conservation has attributed a **1999 die-off of thousands of fish** in Staten Island to malathion poisoning. The spraying campaign subsequently affected the Hudson River, Long Island Sound and the Great South Bay, and has been blamed for causing **the largest extermination of lobsters**. Roughly eleven million lobsters, 90 percent of the full population, perished. Connecticut and New York **lobstermen sued** the companies that manufacture and apply the pesticides used in spraying.

In April 1990, the Office of Technology Assessment (OTA) of the **US Congress** released an extensive **report** entitled ***"Neurotoxicity: Identifying and Controlling Poisons of the Nervous System."***(16) The two top targets of the report are chemical pesticides and pharmaceutical drugs. The OTA report expresses concern that research projects have not adequately addressed **neurotoxicity of these substances – a major issue for the survival of humanity, as we know it**:

> "… very few new and existing chemicals have been evaluated specifically for neurotoxicity. Of particular concern are the delayed effects of some of the organophosphate pesticides. Organophosphate and carbamate insecticides are the most common causes of agricultural poisonings. **Malathion**, an organophosphate pesticide, **can permanently damage the nervous system after only one exposure**."(16)

Last year, the pesticides Anvil 10+10 (10 percent sumithrin, 10 percent piperonyl butoxide, and 80 percent "inert" ingredients) and Scourge (resmethrin) were used. Both of these pesticides are Type I synthethic pyrethroids, manufactured in the laboratory to mimic the natural anti-insect pyrethrins extracted from chrysanthemum flowers.

> Anvil 10+10 is a relatively new pesticide. There have been few tests of any kind on this product on either animal or human subjects. **Although** both Anvil 10+10 and Scourge

> have been **approved for sale**, this **approval does not mean they are harmless**. According to the U.S. Environmental Protection Agency, neither **Anvil 10+10 nor Scourge has ever been tested for their impact on the immune system because "it has not been required to test for immunity".**(17)

Recent research on pyrethroids has found that their **mode of action** is similar to chlorinated pesticides such **as chlordane and aldrin**. These pesticides were **banned** in the United States in the 1980's **due to** their dangerous **impact on human** health and the **environment**.

A 1998 study by Drs. Joan Garey and Mary S. Wolff of Mount Sinai School of Medicine, New York, found that the chemical **sumithrin**, **the main pesticide in Anvil** 10+10, disrupts human hormone balance and **increases the growth of breast cancer cells in test tubes.**(40)
The study concluded: "Overall, our studies imply that each pyrethroid compound is unique in its ability to influence several cellular pathways. These findings suggest that **pyrethroids** should be considered to be **hormone disruptors**, and their potential to affect endocrine function in humans and wildlife should be investigated." (40)

ALL LIFE FORMS INCLUDING HUMANS ARE VULNERABLE TO TOXIC EFFECTS OF PESTICIDES.

It is estimated that 6 to 15 percent of the population is chemically sensitive. If only 10 percent of a 10 million population would be chemically sensitive, the number of people potentially affected by chemical pesticides, such as Anvil 10+10 and Scourge, (which have a tendency to cause allergies and neurological problems), could reach 1 million people.

To this 1 million potentially affected people must be added an additional unknown number of elderly, those with impaired immunity (patients with AIDS, cancer, etc) **and children as well as future offspring of pregnant women**; and those who may become **sensitized**. These affected people may develop immediate and/or delayed adverse reactions ranging from mild to life threatening.

Considering the **cumulative, multigenerational, and destructive impact of pesticides, especially on children's development and behavior, it is frightening to imagine the delayed consequences of repeated pesticide spraying**. These consequences will especially serious for those with **allergies or weakened immune systems, cancer, those who are chemically sensitive, as well as for children and future generations**.(6-16, 18-31, 34-38)

Cells are the basic structural unit of plants, insects, animals and human beings. Despite the large differences in function and shape of our cells, **we share the same basic cell blueprint, including the same basic biochemical metabolic processes, with other living organisms, including mosquitoes.**

> *Each cell – whether from a plant or an insect or an animal – is a microscopic bag with a nucleus (apart from red cells), containing chromosomes in the form of DNA, and a fluid material called cytoplasm. The cell is surrounded by a membrane -- an "outer skin" -- and contains additional specialized structures such as mitochondria for the generation of energy.*

Because **we share** the common **basic life blueprint** with other life forms, chemical **pesticides** produce "**toxic broad spectrum**" impacts, damaging or killing also various useful insects, animals, and plants as well as **damaging human health**.

Children's special susceptibility to pesticides was first widely publicized by the National Research Council (NRC) in their 1993 report *Pesticides in the Diets of Infants and Children*. **The National Research Council concluded that children are not adequately protected from pesticides for the following reasons** (39):

- **children are exposed to pesticides even during their prenatal development,** because the pesticides and other **pollutants** are **shifted from** the bodies of their **mothers** through placenta **to their body tissues**;

- after birth, children receive daily pesticide residues in **breast milk** and, later, through **food, water and other sources** – along with other harmful pollutants;

- on average, **children** receive more pesticides per body weight than adults because, **for their size** they **consume more calories**, drink more **water** (frequently contaminated by pesticides) and eat more **fruit** and **vegetables** (commonly sprayed), and breathe more **air** (polluted);

- additionally, **pesticide impacts are especially destructive in children** because their enzymes are not yet fully functioning and, therefore, they have even more difficulties eliminating toxic substances than adults.

The National Research Council recommended changes in the regulation of pesticides. Many of these changes were included in a 1996 law (the Food Quality Protection Act (FQPA), but have yet to be fully implemented.(39)

SAFE APPROACH

Dr. Gochfeld, U.S. Professor of Environmental and Community Medicine, states, (Appendix A) **"We should consider the disease itself and the risk to the human population…seven deaths in a population of over 10 million people over a one year period** is certainly tragic, but pales beside the number of deaths from many other diseases that are addressed less aggressively."

It is urgent to **educate** the general **public, media and decision makers** that:

- **chemical pesticides**, including those used to prevent West Nile Virus encephalitis in New York, cause much **more health damage** and are much more harmful to public health **than the extremely small health risk** presented **by West Nile Virus**.

- **the West Nile Virus is carried by birds and spread by mosquitoes,** and is **not an especially dangerous disease**. The **only vulnerable** people are those **who have reduced immunity** – they are much more susceptible to *any* infection, exotic or not.

- ultimately, **no one can avoid exposure to those pesticides**. We all breathe the same air and live on the same planet.

- there are **safe approaches** that can be used to control and **prevent West Nile Virus encephalitis**.

A combination of the dramatic response in the media, lack of experiences of present generations of North American health professionals with epidemics other than AIDS, undoubtedly have contributed to the over-blown and fearful response to this relatively insignificant virus. As mentioned previously, thousands of people carrying antibodies against West Nile Virus never experienced any kind of symtoms although they were exposed to it.

Nevertheless, we should develop and re-discover **safe** approaches for the control of pests - including mosquitoes. There are safer, more effective ways than chemical pesticides to control mosquitoes. These methods include **disrupting mosquito breeding cycles** by removing stagnant water, etc., as recommended by New York City Department of Health; products such as **Mosquito Magnet**, **safe natural mosquito repellents**, etc.

Among natural mosquito repellent products containing herbal extracts and oils is *Nature 99 Herbal Extract*, a natural repellent containing essential oils from the twigs and leaves of the Eucalyptus Citriodora plant which has an extraordinarily high content of citronella. Other natural products include *Royal Neem* (a blend of herbs, essential oils and aloe), *Nature's Body Guard*, *Zetastop and Mosquitoex*. **Combining approaches** that **prevent and disrupt mosquito breeding cycles** not only avoid damage to human health and the ecosystem, but it **will** also **avert** highly expensive **litigation** brought about by the current spraying program and the high **expenses for** such **spraying.**

The use of chemical pesticides started about fifty years ago. The chemical pesticides that were once touted as being a "wonderful, safe approach" to pest control are now known to contaminate everything, soil, food, water, air, rain, all living forms including our bodies and the bodies of our children, even before their birth. They are destroying our ecosystem -- and us.

If we do not stop the indiscriminate use of pesticides, we will continue to endanger our environment and the quality of our own health and more crucially, the healthy physical and mental development of our children and future generations.

Pesticides are designed to kill. We share the same life blueprint with other life forms, including mosquitoes. All chemical pesticides are also harmful to humans.

For this reason, the indiscriminate mosquito spraying must be stopped and the unnecessary use of chemical pesticides needs to be abandoned and outlawed. Such an action will benefit EVERYONE including all stakeholders and their families – we all breathe the same air, and live on the same planet ...

Signed,

(please see next page)

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This Open Letter is distributed by Staten Island Citizens for Healthy Alternatives (SICHA), the No Spray Coalition, and SAFE NYC.

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