Oral Glutathione and Health
Outcomes Among Persons With
Post-Polio Syndrome is the official
name of a study being done at the
University of Michigan under the
direction of Principal Investigator
Claire Z. Kalpakjian, MS, PhD.
The project was designed to take
two years. The team is currently
recruiting participants, and the
study is listed in the U.S. National
Institutes of Health website
According the site, “Subjects will
take a glutathione supplement by
mouth for three months after an
initial medical visit, blood draw
and physical exam. There are four
points during the three months
when subjects will fill out surveys
and record food intake and sleep
times in diaries for seven days.
They will also wear a small
device, a SenseWear®
monitor, for
seven days that records physical
activity, body temperature and
other measures.

“After the
fourth point
during the
three-month
study period,
they will
return to
the medical
center for
another physical exam and blood
draw. Physicians trained in physi-
cal medicine and rehabilitation
will be monitoring the study.”

Dr. Kalpakjian said, “The
SenseWear® device is an innova-
tive technology that allows us to
track a person’s sleep patterns,
physical activity and even the
calories they burn each day. Each
research subject fills out diaries to
report their sleep, diet and moods.
An objective method such as a
device and a subjective one like a
diary complement each other. As
a result we have a more genuine
picture of a person’s sleep and
activity. This study, although small
and preliminary, will make an
important contribution to research
on post-polio syndrome.”

Please note that the team is still
seeking participants who need
to be within traveling distance to
Ann Arbor, Michigan, as two visits
to a University of Michigan clinic
are required.

Post-Polio in Jerusalem
The other 2011 study was called
Characteristics of poliomyelitis and
post-polio patients among Jews
and Arabs in Jerusalem under the
leadership of Zeev Meiner, MD,
Principal Investigator, Department
of Physical Medicine and Rehabili-
tation, Hadassah Medical Center,
Jerusalem, Israel.
The team has submitted a final
report to PHI but the work contin-
ues as they analyze and summa-
rize the data for publication and
for presentations at international
conferences. Drs. Meiner and
Schwartz presented a poster at the
Post-Polio Syndrome – A Challenge
of Today, the international post-
polio conference in Copenhagen
held last summer (2011).
The data they will be reporting
compares medical, demographic,
socioeconomic and psychological
information of polio survivors
in Jerusalem with people in
Jerusalem of the same age and
gender who did not have polio.
This data will help distinguish the
characteristics of polio people as
they age from those without polio.
The results to date showed that
polio survivors, in spite of their
severe disability, succeeded in
having a family life similar to the
general population. They com-
pleted higher education, and,
despite their disabilities and ad-
vanced age, were still in the work
force. Similar to other studies
from Norway, Holland and Japan,
the team found that polio survi-
vors presented higher incidences
of co-morbidities such as cardio-
vascular problems, chronic pain
and diabetes, reflecting their
sedentary life style.
The group also compared the
data of polio survivors who had
post-polio syndrome (PPS) using
the March of Dimes criteria
(2001) with those who were not
diagnosed, looking for factors
that distinguish the two groups.
The only significant difference
between the PPS and non-PPS
patients was the marital status.
Only 65.8 percent of PPS patients
were married as opposed to 81.5
percent of non-PPS patients. The
rate of PPS found in the study –
58 percent – was similar to that
found in previous studies. Polio
survivors, especially those with
PPS, showed significant difficul-
ties in ambulation at home and
work and in ADL function (activi-
ties of daily living) in comparison
to the general population.
The data comparison of Jewish
and Arabic polio survivors showed

The SenseWear® monitor
that polio survivors in the Arabic community are younger and have a higher level of difficulties and disabilities as compared to the Jewish polio population, which reflects the paucity of medical infrastructure in the Arabic quarters of Jerusalem.

The researchers also were interested in what rehabilitation methods work and developed a special multidisciplinary rehabilitation program for post-polio patients in the day care unit of the department of Physical Medicine & Rehabilitation in Hadassah Medical Center.

Survivors were placed into homogeneous groups according to their grade of disability using the severity of PPS symptoms according to their IPPS (index of post-polio sequelae) developed by researcher Kalpakjian’s team in 2005. (Kalpakjian CZ, Toussaint LL, Klipp DA, Forchheimer MB. Development and factor analysis of an index of post-polio sequelae. Disabil Rehabil. 2005 Oct 30; 27(20):1225-33.)

Each group received a series of 12 group and individual therapy sessions provided twice a week for a total of six weeks. The treatments were provided by rehabilitation teams with special training in the specific needs of polio patients. The treatment program included physiotherapy, occupational therapy, gait analysis, orthotics evaluation and management, assistive devices prescription, hydrotherapy and adjusted physical activities.

In addition, the patients received psychological and social support, including psychotherapy social evaluation, art therapy and group therapy led by a social worker. Polio patients received dietetic assessment and care by a rehabilitation dietician and respiratory rehabilitation as well as speech therapy as needed. They also attended educational sessions provided by specialized rehabilitation staff regarding coping with the disability and other related subjects, such as family coping strategies.

All patients participating in the specific rehabilitation program are evaluated at the end of the program, and will be evaluated again six months after the end of the program.

The effects of the special multidisciplinary rehabilitation program are encouraging, and the work continues.

Dr. Meiner states that this is the first study trying to identify the needs of polio survivors in Israel as compared to the general population. “The results are important in order to develop preventive interventions and rehabilitation programs in order to improve the quality of life of polio survivors.”

“Our study showed, as we already expected, that polio survivors, through their immense struggle, succeeded to gain even higher education and almost the same rate of employment as the general population,” said Dr. Schwartz. “Unfortunately, in the last years, many of them are suffering from the devastating effect of PPS. Therefore, it is of utmost importance to determine the risk factors for this syndrome and to prevent or ameliorate its effect.”

Post-Polio Health International will report to our Members when information from these studies is published in peer-reviewed professional journals.

**PHI’s Research Fund**

The Research Fund was established in 1995 to support the work of researchers investigating the late effects of poliomyelitis and/or neuromuscular respiratory disease. The Fund’s priorities are to provide funds to initiate new research, to continue notable projects or to combine with other resources to complete research into post-polio and neuromuscular respiratory research. For details, go to www.post-polio.org.