

FROM

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**Post-Polio Sequelae Monograph Series. Volume 9 (2).
Hackensack: Harvest Press, 1999.**

Emotional Stress in Polio Survivors and Post-Polio Sequelae

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Emotional stress is the second most frequent cause of PPS symptoms, causing fatigue in 61% of polio survivors, muscle pain in 51% and muscle weakness in 45%. (Bruno & Frick, 1987; Bruno, et al., 1991) Polio survivors report other symptoms of chronic stress, including trouble falling asleep because their "minds are racing" in 58%, frequent feelings of anxiety (49%) and a frequency of ulcers that is 80% higher than in the general population. (Bruno & Frick, 1987; Bruno, 1995a).

There appear to be two sources of polio survivors' stress: having had polio and having PPS.

Stress and polio. Three North American surveys and two clinical studies of more than 2,200 polio survivors found 23% more "Type A" behavior - being hard-driving, time-conscious, pressured and overachieving - as compared to those without disabilities or those who have spina bifida, a physical disability apparent at birth. (Bruno & Frick, 1987, 1991; Bruno, et al., 1991; Creange and Bruno, 1997; Frick, 1997). It should not be a surprise that polio survivors also have more years of education, work more hours of overtime and take fewer sick days than do non-disabled workers. (Bruno, et al., 1991, Bruno & Frick, 1987, 1989; Lonnberg, 1993)

"Type A" behavior (TAB) seems to have developed in polio survivors as an attempt to prevent abuse. (Bruno & Frick, 1989) Polio survivors who were

emotionally, physically or sexually abused as a result of their polio-related disability are at least 15% more sensitive to the criticism of others and more ready to believe that they are failures than polio survivors who had not been abused or those without disabilities. (Frick, 1997) And the more sensitive polio survivors are to criticism and failure, the more "Type A" they are and the less likely they are to agree to complete or even begin a PPS treatment program. (Bruno, 1995b; Bruno & Frick, 199; Frick, 1997)

Whether or not TAB actually did protect against criticism, failure or abuse, it has taken a heavy toll on polio survivors. Post-polio fatigue and muscle pain are more common in "Type A" polio survivors, as are trouble falling asleep, anxiety, frequent headaches, neck pain, back pain or muscle spasms. (Bruno & Frick, 1987; Schanke, 1998). Type A polio survivors are also more lonely, are less likely to agree to be evaluated for PPS and are less willing to take rest breaks during the day to treat PPS. (Creange and Bruno, 1997; Frick, 1997).

What's more, many polio survivors' stress response system is compromised. Polio survivors with fatigue do not release enough ACTH in response to stress. (Bruno, et al., 1995b) ACTH is a hormone, produced by a part of the brain damaged by the poliovirus, that both activates the brain and turns on the body's stress "braking" system. (Bodian, 1949) So polio survivors with fatigue are less able to activate their brains and concentrate when they need it most, that is when they are under stress.

Distress and PPS. Unexpected and disabling PPS symptoms occurring in the prime of life are understandably a cause of distress. (Frick, 1985; Frick and Bruno, 1986) And polio survivors do have "significant psychological distress" and symptoms of depression. (Bruno & Frick, 1991; Conrady, et al, 1989) Interestingly distress and depression are not caused by PPS symptoms themselves, but when new symptoms cause the loss of the functional abilities necessary to work, socialize and participate in family life, or when polio survivors believe that PPS symptoms are beyond their control and will progress. (Schanke, 1997; Kemp, et al., 1997; Conrady, et al, 1989; Diard, et al, 191994; Mullins, et al, 1995; Kirsh, et al, 1989; Peterson, et al, 1989).

Depression is more common in polio survivors who have less social and family support to help them deal with functional losses (Tate, et al, 1994;). A

lack of family support is also related to polio survivors not completing or even beginning a treatment program for PPS (Creange & Bruno, 1994). Using crutches or a wheelchair is associated with polio survivors feeling inadequate as family members, while embarrassment about having an obvious disability is associated with refusal to use assistive necessary to treat PPS (Creange & Bruno, 1997; Bruno & Frick, 1987)

Both stress and distress must be addressed if polio survivors are to make the lifestyle changes and use assistive devices necessary to manage PPS.

It is recommended that all patients post-polio post-polio receive a psychological assessment as well as individual and group psychotherapy to teach "more effective coping behaviors," decrease TAB and help deal with past abuse and feelings of inadequacy, embarrassment and sensitivity to criticism and failure that prevent polio survivors from treating their PPS (Bruno and Frick, 1991; Conrady, et al, 1989; Tate et al, 1994).

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