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**COMPARISON BY SYMPTOM CATEGORY OF SUBJECTS WITH  
AChE-INHIBITOR EXPOSURE (ORGANOPHOSPHATE  
OR CARBAMATE) AND ILL PGWV**

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Table A.1  
Effects in AChE-Inhibitor-Exposed Subjects and Reported by Ill PGWV

Effect	Persons with Ache-Inhibitor Exposure	Ill PGWV
Autoantibodies increased	<p>Increased autoantibodies have been reported following:</p> <ul style="list-style-type: none"> <li>Exposures to a variety of chemicals, including pesticides (Ziem and McTamney, 1997)</li> <li>Specifically OP (as well as OC) pesticides such as chlorpyrifos and malathion (Broughton, 1990; Street, 1981)</li> </ul>	<ul style="list-style-type: none"> <li>Autoantibodies noted in some ill PGWV (Haley et al., 1997)</li> <li>Increased antibodies to squalene reported (Asa et al., 2000)</li> </ul>
Chemical sensitivity/intolerance	<ul style="list-style-type: none"> <li>Chemical sensitivity associated with OP (and other pesticide) exposure (Miller and Mitzel, 1995; Ziem and McTamney, 1997; Rosenthal and Cameron, 1991)</li> <li>OP associated with alcohol intolerance (Corrigan et al., 1994)</li> <li>Associated with antibiotic sensitivity (Thrasher et al., 1993)</li> </ul>	<ul style="list-style-type: none"> <li>MCS (multiple chemical sensitivity) increased in PGW (0.8%) vs. Bosnia deployed (0.4%) British personnel: RR 1.9 (0.8–4.4); vs. era veterans (0.3%) RR 2.2 (1.0–4.9) (Unwin et al., 1999)</li> <li>5% of Air Force PGWV vs. 2% non-deployed veterans reported chemical sensitivity: RR = 2.5, significant (Fukuda et al., 1998)</li> <li>88% of 59 consecutive evaluated veterans evaluated at Houston referral center had new chemical sensitivities (Miller and Ashford, 1999)</li> <li>Canadian PGWV had increased prevalence of “symptoms of chemical sensitivity”; prevalence OR 40.01 (no CI given) (Canadian Department of National Defence, 1998)</li> </ul>
Cognitive problems	<p>Memory, concentration, other See list of acute and chronic effects.</p> <ul style="list-style-type: none"> <li>Example: RR (95% CI): forgetfulness: 1.8 (1.3–2.5); loss of concentration 3.0 (2.0–4.5) (Bowler et al., 1996)</li> <li>Further examples (Fukuda et al., 1998; MMWR, 1995)</li> </ul>	<p>Memory, concentration, other. Also see Chapter Three.</p> <ul style="list-style-type: none"> <li>Example: British PGWV vs. era controls: crude OR (95%CI) forgetfulness 3.9 (3.5–4.5); loss of concentration 3.7 (3.2–4.2); avoiding doing things or situations 3.2 (2.7–3.7) (De Fraites et al., 1992; Unwin et al., 1999)</li> <li>Example: Iowa PG Study Group: cognitive dysfunction vs. non-deployed veterans 18.7% vs. 7.6%, RR=2.5 (Iowa Persian Gulf Study Group, 1997)</li> </ul>

Table A.1 (continued)

Effect	Persons with Ache-Inhibitor Exposure	III PGWV
Intestinal function changes	<ul style="list-style-type: none"> <li>Increased in vitro proliferation of intestinal epithelial cells (Greenman et al., 1997)</li> <li>GI complaints with chlorpyrifos (Thrasher et al., 1993)</li> <li>22 Malathion-exposed vs. 21 non-exposed seamen (59%, RR 5.9, <math>p &lt; 0.01</math>); increased abdominal pain and nausea, 50%, RR 2.0; increased change in appetite, 32%, RR 8.2 (<math>p &lt; 0.01</math>) (Markowitz et al., 1986)</li> <li>Reported symptoms in mevinphos (Phosdrin) and phosphamidon (Dimecron)-exposed workers included nausea, vomiting, abdominal pain, anorexia (Mittling et al., 1985)</li> <li>Increased diarrhea, nausea, and stomach cramps after metam sodium exposure: diarrhea 50% vs. 15%, RR 3.3 (95% CI 2.0–5.7); nausea 49% vs. 9%, RR 5.4 (95% CI 2.7–10.7) (Bowler et al., 1996)</li> </ul>	<ul style="list-style-type: none"> <li>High rate of GI symptoms: diarrhea, abdominal pain, weight loss (Roy et al., 1998)</li> <li>Diarrhea in 44% of 59 symptomatic PGWV (Centers for Disease Control and Prevention, 1995)</li> <li>U.S. Air Force PGWV (<math>n = 1,163</math>) vs. non-deployed military personnel (<math>n = 2,538</math>): increase chronic symptoms of gas, bloating, cramps, abdominal pain 25%, RR 3.6; diarrhea 16%, RR 5.3; weight gain <math>\geq 10</math> lb 15%, RR 2.5; weight loss <math>\geq 10</math> lb, 2%, RR 2.0; milk intolerance 7%, RR 1.75 (Fukuda et al., 1998)</li> <li>79 Reservists of 123rd Army Reserve Command abdominal pain 35%; diarrhea 32% (De Fraitres et al., 1992)</li> <li>4,004 surveyed Hawaii and Pennsylvania personnel (715 active duty and 766 Reserve units who deployed; 1,576 active duty and 948 Reserve veterans who did not deploy). Reservist data: stomach upset 28%, RR 3.1; constipation 8%, RR 3.3; weight loss/gain 1.3%, RR 1.9 (similar RR for active duty but lower %s) (Stretch et al., 1995)</li> <li>Assessment of 4 units (A–D), deployed % (prevalence ratio vs. non-deployed): diarrhea A. 27% (12.5); B. 15 % (5.3); C. 10% (3.6); D. 13% (4.1); gas, bloating, cramps, abdominal pain: A. 38% (2.7); B. 18% (1.7); C. 18% (1.9); D. 20 (2.0) (MMWR, 1995)</li> </ul>

Table A.1 (continued)

Effect	Persons with Ache-Inhibitor Exposure	III PGWV
Irritability and aggression (see also mood and personality)	<ul style="list-style-type: none"> <li>Described with OPs and carbamates, in humans and animals (numerous small samples and case reports) (Bear et al., 1992; Dille and Smith, 1964; Gershon and Shaw, 1971; Grob and Harvey, 1953; Holmes and Gaon, 1956; Holmstedt, 1959; Metcalfe and Holmes, 1969; Namba et al., 1971; Rowntree et al., 1950)</li> </ul>	<ul style="list-style-type: none"> <li>Air Force PGWV (vs. non-deployed) chronically moody/irritable, 36% (RR 3.6) (Fukuda et al., 1998)</li> <li>U.K. PGWV vs. era: irritability/angry outbursts: OR (95%CI): 3.5 (3.2-4.0); feeling distant or cut off from others 3.2 (2.7-3.7) (Unwin et al., 1999)</li> <li>123rd Army Reserve Command (n=79): 47% report being easily irritated (De Fraités et al., 1992)</li> <li>Assessment of 4 units (A-D), deployed % (prevalence ratio vs. non-deployed): A. 29% (2.9); B. 10% (5.3); C. 24% (3.4); D. 23% (3.3) (MMWR, 1995)</li> </ul>

Table A.1 (continued)

Effect	Persons with Ache-Inhibitor Exposure	III PGWV
<p>Pain, fibromyalgia, chronic fatigue</p>	<ul style="list-style-type: none"> <li>Malathion-exposed vs. non-exposed seamen showed increased % (RR) of headache 73% (2.9); abdominal pain 50% (2.0); muscle or joint pain 33% (2.25) (Markowitz et al., 1986)</li> <li>South African fruit-farm sprayers showed symptom % (RR vs. non-exposed) for symptoms prolonged &gt; 3 mo: stomach pain 2% (2.0); earache 2% (2.0); pain in limbs 7% (1.75); headache 115 (2.75); and chest pain 7% (1.4) (none significant); current symptoms were significantly greater only for headache 45% (1.8) (p &lt; 0.05) (London et al., 1998)</li> <li>In 90 metam-sodium-exposed, %-RR (95% CI) vs. 90 non-exposed: stomach cramps/pain 40%-2.4 (1.4-4.1); chest tightness 47%-4.6 (2.4-8.7); headache &gt; 1 day/week 64%-2.1 (1.5-3.0); joint pain or swelling 44%-2.6 (1.6-4.3) (Bowler et al., 1996)</li> </ul>	<ul style="list-style-type: none"> <li>3,719 CCEP registrants w/primary diagnosis of SSID, % with pain symptoms: joint pain 47%; headache 44%; muscle pain 22%; abdomen pain 16%. Similar %s were seen in 15,953 with other primary diagnoses. Chest pain: 7.1% of 9,025 with any diagnosis (Roy et al., 1998)</li> <li>1,163 U.S. Air Force PGWV vs. 2,538 non-deployed: chronic pain % (RR): headache 45% (1.4); joint pain 33% (3.0); joint stiffness 28% (3.1); abdominal pain/cramps/bloating 25% (3.6); muscle pain 18% (3.0); sore throat 15% (2.5); chest pain 5% (2.6) (all significant) (Fukuda et al., 1998)</li> <li>U.K. PGWV vs. era veterans, %-OR (95% CI): headache 52%-2.1 (1.9-2.3); joint stiffness 40%-2.2 (1.9-2.4); pain in several joints without swelling/redness 32%-2.8 (2.5-3.2); chest pain 25%-2.5 (2.2-2.9); back disorders 35.7%-1.5 (1.3-1.7); migraine 18%-2.2 (1.8-2.6); arthritis 10% -1.2 (1.0-1.5) (Unwin et al., 1999)</li> <li>79 Reservists of 123rd Army Reserve Command, %: pain any joint 54%; headache 37%; abdominal pain 35%; joint pain upper extremity 33%; joint pain lower extremity 30%; pain back or neck 27% (De Fraités et al., 1992)</li> <li>3,695 phone-interviewed Iowa PGWV vs. non-deployed veterans. Fibromyalgia symptoms % (RR): 19.2% (2.0) (Iowa Persian Gulf Study Group, 1997)</li> <li>4,004 Hawaii and Pennsylvania personnel (Reserve vs. non-deployed data given; active duty data similar): % (RR): sore throat 35% (1.8); headache 47% (1.8); back problem 26% (2.0); stomach ache 28% (2.1); muscle ache/cramp 32% (2.9); aching joint/bone 35% (4.1) (Stretch et al., 1995)</li> <li>3,927 personnel from 4 units (A-D): PGWV: % (prevalence ratio vs. non-deployed): joint pain A. 38 (4.0); B. 35 (4.1); C. 29 (2.2); D. 30 (3.0); joint stiffness A. 33 (3.0); B. 26 (4.4); C. 26 (2.4); D. 26 (3.4); GI including cramps/pain A. 38 (2.7); B. 18 (1.7); C. 38 (2.7); D. 18 (1.7); headache A. 43 (1.4); B. 41 (1.4); C. 42 (1.3); D. 46 (1.6) (MMWR, 1995)</li> </ul>

Table A.1 (continued)

Effect	Persons with Ache-Inhibitor Exposure	III PGWV
Peripheral neuropathy	<ul style="list-style-type: none"> <li>• 90 New York pesticide applicators: higher vibration thresholds vs. controls (<math>p &lt; 0.000</math>; <math>p &lt; 0.004</math> non-dominant) (Stokes et al., 1995)</li> <li>• 67 Hispanic farm workers vs. 68 controls (controls may have had prior pesticide exposure): no sensory or motor NCV effects (Engel et al., 1998)</li> <li>• 144 farm applicators vs. 102 controls had significantly greater odds for more current peripheral nerve symptoms (OR 3.1), signs of poor coordination (OR 4.3), and absent deep tendon reflexes (OR 2.9) and reduced power (OR 2.1). Mean toe vibration threshold scores on a logarithmic scale were significantly higher among applicators (<math>\beta=0.035</math>) and those reporting previous pesticide poisonings (<math>\beta = 0.074</math>) (Cole et al., 1998)</li> <li>• 34 OP manufacturing workers in India vs. 34 controls: 58% (RR 6.6) had evidence of peripheral neuropathy, including burning sensation in the palms and feet, numbness, reduced sensitivity, poor sensory localization, muscle weakness, and sluggish tendon reflexes. Exposed had low cholinesterase levels (Ernest et al., 1995)</li> <li>• 8 people in a case series developed peripheral neuropathy after exterminator-applied commercial Dursban (chlorpyrifos). Among those with peripheral neuropathy alone, NCVs recovered in all cases, and sensory symptoms were improved or resolved (Kaplan et al., 1993)</li> <li>• 131 Dutch dithiocarbamate-exposed flower-bulb growers: Conduction velocities showed exposure-related reductions in the motor fibers of the median (-1.1 m/s) and peroneal (fast fibers: 1.2 m/s; slow fibers: -1.3 m/s) nerves, and in the sensory fibers of the median (-1.4 m/s) and sural (-0.9 m/s) nerves; one-tailed <math>p &lt; 0.05</math>, often <math>p &lt; 0.01</math> level. Refractory periods increased in sural and peroneal nerves (Ruijten et al., 1994)</li> <li>• Other reports of sensory, motor, and sensorimotor neuropathy with OP and carbamate exposure (particularly following acute toxicity) (Bidstrup et al., 1953; De Jager et al., 1981; Fisher, 1977; Hierons and Johnson, 1978; Jedrzejowska et al., 1980; Metcalf et al., 1985; Senanayake and Johnson, 1982; Senanayake and Karaliedde, 1987; Stamboulis et al., 1991; Tsatsakis et al., 1996; Umehara et al., 1991; Branch and Jacques, 1986)</li> </ul>	<ul style="list-style-type: none"> <li>• Manchester Gulf War study: 2,221 PGWV vs. 1,964 non, % (RR) numbness and tingling: 32% (2.0) (Cherry, 1999)</li> <li>• 1,163 U.S. Air Force PGWV vs. 2,538 non-deployed military personnel, chronic numbness/tingling % (RR): 29% (5.8) (Fukuda et al., 1998)</li> <li>• 3,284 PGWV vs. 2,408 era-veterans: tingling fingers/arms: %-OR (95%CI): 25% - 2.6 (2.3-3.1) (Unwin et al., 1999)</li> </ul>

Table A.1 (continued)

Effect	Persons with Ache-Inhibitor Exposure	III PGWV
Respiratory effects	<ul style="list-style-type: none"> <li>Chest/respiratory symptoms (CP, SOB, cough, wheeze) % (RR): 38% (2.6) (22 malathion-exposed vs. 21 non-exposed seamen) (Markowitz et al., 1986)</li> </ul>	<ul style="list-style-type: none"> <li>Shortness of breath reported in 20% of 21,579 CCEP participants (Roy et al., 1998)</li> <li>3,284 PGWV vs. 2,408 era veterans: % - crude RR (95% CI): asthma 6.5% - 1.8 (1.3-2.3); bronchitis 4.4% - 1.8 (1.3-2.5) (Unwin et al., 1999)</li> <li>3,113 PGWV deployed vs. 3,439 non-deployed Canadian forces personnel, adjusted POR (95% CI): bronchitis 2.81 (2.22-3.55); asthma 2.64 (1.97-3.55) (Canadian Department of National Defence, 1998)</li> <li>1,163 U.S. Air Force PGWV vs. 2,538 non-deployed military personnel: chronic SOB % (RR) 15% (2.5); chronic wheezing 5% (2.5) (Fukuda et al., 1998)</li> <li>79 Reservists of 123rd Army Reserve Command: cough 35% (De Fraitjes et al., 1992)</li> <li>Iowa PGWV deployed vs. non-deployed veterans (n = 3,695) % (RR): asthma 7.2% (1.8); bronchitis 3.7% (1.4) (Iowa Persian Gulf Study Group, 1997)</li> <li>4,004 Hawaii and Pennsylvania personnel: deployed % (RR vs. non-deployed) rates for Reservists: flu 2.3% (1.8); head cold 45% (1.7); sinus problems 46% (1.8); sore throat 35% (1.8); eye/ear/nose problem 17% (3.0); cough 23% (1.8); hoarseness 12% (3.2) (Stretch et al., 1995)</li> <li>17,248 Veterans Affairs Persian Gulf Health Registry participants: % with this as one of the top 3 complaints: SOB 7.5%; cough 3.8%; choking sensation, sneezing, mouth breathing 3.3% (Persian Gulf Veterans Coordinating Board, 1995)</li> </ul>

Table A.1 (continued)

Effect	Persons with Ache-Inhibitor Exposure	III PGWV
<p>Skin, hair, and dental lesions and com-plaints</p>	<ul style="list-style-type: none"> <li>Rash increased in 90 metam-sodium-exposed vs. 90 non-exposed: %-RR (95%CI): 38 (1.1.1) (3.6-34.3) (Bowler et al., 1996)</li> <li>Skin or hair problems increased in 22 malathion-exposed vs. 21 unexposed: 27%, RR 2.6. Problems with mouth, lips, or teeth: 36%, RR 2.5 (Markowitz et al., 1986)</li> <li>Atopy reported in a case series of chlorpyrifos exposure (Thrasher et al., 1993)</li> <li>Biological plausibility: ACh is involved in regulation of keratinocyte migration and adhesion (Grando et al., 1995; Conti-Fine and Horton, 1994)</li> <li>Hair loss has been noted following carbamate exposure (non-pesticide use) (Field, 1980)</li> </ul>	<ul style="list-style-type: none"> <li>Rash reported by 35% of 79 reservists of 123rd Army Reserve Command. Hair loss in 22%; dental complaints in 47% (including "bleeding and painful gums") (De Fraites et al., 1992)</li> <li>Rash was 2nd most common complaint among 17,248 Veterans Affairs Persian Gulf Health Registry participants (cited by 17% (Persian Gulf Veterans Coordinating Board, 1995)</li> <li>Chronic rash (&gt;6 mo) was increased in 1,163 U.S. Air Force PGWV vs. 2,538 non-deployed military personnel: rash or sores % (RR): 12% (2.4) (Fukuda et al., 1998)</li> <li>Skin symptoms increased in 3,284 U.K. PGWV vs. 2,408 era veterans: %-crude OR (95%CI): dermatitis 28%-1.9 (1.7-2.2); Eczema/psoriasis 8%-1.2 (1-1.5). Hair and scalp problems higher in same group: %-crude OR (95% CI): 17% - 2.1 (1.8-2.5) (Unwin et al., 1999)</li> <li>Skin irritation increased in deployed vs. non of 4,004 Hawaii and Pennsylvania personnel: data for reservists given: % (RR): 18.5% (4.7) (Stretch et al., 1995)</li> <li>Rash increased in deployed vs. non from 4 assessed units (A-D) (3,927 personnel): %-PR: A. 25% 5.3; B. 15% 4.5; C. 20% 3.5; D. 19% -4.4 (MMWR, 1995)</li> <li>Hair loss noted in ~13% of CCEP registrants; bleeding gums by 8% of 18,075 CCEP registrants (DoD, 1996)</li> <li>Bleeding gums by 8.5% and 9.1% of 3,719 and 15,953 CCEP registrants with primary diagnoses of SSID and Other (Roy et al., 1998)</li> </ul>



Table A.1 (continued)

Effect	Persons with Ache-Inhibitor Exposure	III PGWV
<p>Sleep problems</p>	<ul style="list-style-type: none"> <li>Sleep problems increased in 22 malathion-exposed vs. 21 non-exposed seamen: 50%, RR 2.0 (<math>p &lt; 0.05</math>) (Markowitz et al., 1986)</li> <li>Sleep problems increased in 164 OP-exposed South African fruit farmers vs. 83 controls: chronic for past 3 mo, % (RR): sleepiness 18% (3.6); tiredness 13 (1.9) (London et al., 1998)</li> <li>Sleep problems and tiredness increased in 90 moban (carbamate) exposed vs. 90 non-exposed: %-RR (95% CI): sleep more 52%-2.6 (1.7-4.1); tired more readily 82%-1.8 (1.4-2.2); difficulty sleeping 55%-1.6 (1.1-2.2) (Bowler et al., 1996)</li> <li>Sleep disturbances reported in other studies of OP- or carbamate-exposed subjects (Midtling et al., 1985; Kashyap, 1986; Richter et al., 1992)</li> <li>Biological plausibility: phenyl-carbamates, which are relatively CNS-selective, have been shown in normal humans to influence REM sleep density at doses not affecting plasma cholinesterase (these have 10x greater inhibition of AChE in hippocampus and cortex than heart and skeletal muscle in rats, perhaps from preferential inhibition of G1 form of the enzyme present in higher concentrations in these brain areas; reason for greater inhibition in these areas not certain) (Weinstock et al., 1994; Holsboer-Trachster et al., 1993)</li> </ul>	<ul style="list-style-type: none"> <li>Sleep disorders constituted a diagnosis in 19% of 21,579 CCEP participants, and the primary diagnosis in 12%. Sleep apnea constituted a diagnosis in 5.5% and the primary diagnosis in 7.4%. 41% of the 3,719 with a primary diagnosis of SSID had symptoms of sleep disturbance; 35% of the 15,953 with another primary diagnosis had symptoms of sleep disturbance (Roy et al., 1998)</li> <li>Increased current and chronic sleep problems were noted in 1,163 U.S. Air Force PGWV vs. 2,538 non-deployed personnel. For chronic symptoms, % (RR): fatigue 41% (3.2); sleep problems 25% (2.8) (<math>p &lt; 0.05</math> for both) (Fukuda et al., 1998)</li> <li>"Unrefreshing sleep" was reported as moderate or severe in 42% of members of an Air National Guard unit in Pennsylvania (Centers for Disease Control and Prevention, 1995)</li> <li>"Insomnia" was among the five most common symptoms in a health symptom checklist among 2,119 PGWV from Ft. Devens (Wolfe et al., 1998)</li> <li>Increased sleep-related problems and fatigue were noted in 3,284 U.K. PGWV vs. 2,408 era controls. % - crude OR (95% CI): unrefreshed sleep 56% - OR 1.8 (2.5-3.1); fatigue 51% - OR 2.7 (2.4-3.0); sleep difficulties 48% - OR 2.3 (2.1-2.6) (Unwin et al., 1999)</li> <li>Fatigue and sleep disturbances were reported as among the top 3 complaints in 17% and 5% of 17,248 veterans in the Veterans Affairs Persian Gulf Health Registry (Persian Gulf Veterans Coordinating Board, 1995)</li> <li>Fatigue and sleep problems increased in deployed vs. non-deployed from 4 assessed units (A-D) (39,27 personnel): %-PR: fatigue A. 54 (3.4); B. 42 (3.4); C. 36 (2.7); D. 33 (2.9); unrefreshing sleep A. 29 (2.5); B. 29 (4.6); C. 23 (2.3); D. 22 (2.5) (MMWR, 1995)</li> <li>Problems falling or staying asleep were more common in 3,113 Canadian PGWV than 3,439 non-deployed personnel after adjustment: 40.5%, RR 1.7 (significance not given) (Canadian Department of National Defence, 1998)</li> </ul>

Table A.1 (continued)

Effect	Persons with Ache-Inhibitor Exposure	III PGWV
Temperature dysregulation	<ul style="list-style-type: none"> <li>• Fever/chills were more common in 22 malathion-exposed seamen than 21 non-exposed seamen (10% vs. 0%; NS) (Markowitz et al., 1986)</li> <li>• Night sweats and insomnia were among the symptoms noted in 16 mevinphos (Phosdrin) and phosphamidon (Dimecron) OP-exposed cauliflower workers (no comparison group) (Midtling et al., 1985)</li> <li>• Perspiring for no reason was increased in 90 metam-sodium-exposed vs. 90 non-exposed persons; 33.3%, RR 4.2, 95% CI 2.0-9.1 (Bowler et al., 1996)</li> <li>• Fever has been reported in other studies involving OP and carbamate pesticide exposure (Gordon and Rowsey, 1998; Hirshberg; and Lerman, 1984; Namba et al., 1971; Saadeh et al., 1996)</li> <li>• Biological plausibility: many studies have shown alterations, some bidirectional, in temperature regulation following OP and carbamate exposures in animal studies (Bassant, 1993; Hirshberg and Lerman, 1984; Namba et al., 1971; Saadeh et al., 1996; Gordon and Rowsey, 1998)</li> <li>• Delayed hyperthermia involves activation of thermoregulatory pathways that "may be similar to infection-mediated fever" (Gordon and Rowsey, 1998)</li> <li>• Skin temperature changes may also occur in humans exposed to carbamates or ACh augmentation and might be considered distinctly from core temperature changes (Abramson et al., 1942; Carmichael and Fraser, 1933; Ellis and Weiss, 1932; Stephenson and Kolka, 1989)</li> </ul>	<ul style="list-style-type: none"> <li>• 1,163 PGWV were more likely to have chronic soaking night sweats and chronic fever vs. 2,538 non-deployed Air Force personnel: sweats 12%, RR 6.0; fever 4%, RR 4.0 (differences significant) (Fukuda et al., 1998)</li> <li>• Night sweats were more common in 3,284 U.K. PGWV than 2,408 era personnel: 24.6%, crude OR 3.0 (95% CI 2.5-3.5) (Unwin et al., 1999)</li> <li>• Fever was reported by 13% of 79 Reservists of 123rd Army Reserve Command (De Fraités et al., 1992)</li> <li>• Increase in reports of chills and fever were noted in 1,481 PGWV vs. 2,524 non-deployed personnel from Pennsylvania and Hawaii: Reservist PGWV 14.5% (RR 3.2) (Stretch et al., 1995)</li> </ul>