

Presentation 6 – Joel Graves

As of 13 Dec 2005 GWRAC Meeting

GULF WAR VETERAN EXPOSURES AND STRESSORS CHART

This chart lists those exposures which overtly or subtly affected Gulf War veterans.

The following Exposures and Stressors, and their synergistic effects, are significant for understanding Gulf War illness.

MAIN CATEGORY	1ST SUB-CATEGORY	2ND SUB-CATEGORY (Note 3)	3RD SUB-CATEGORY (Note 2)	MAJOR SPECIFIC SYMPTOMS (Notes 1, 5, 6)	TARGETS FOR TREATMENT & POSSIBLE DIAGNOSES	HELPFUL PROGRAMS TREATMENT OPTIONS CLINICAL IMPLICATIONS
EXPOSURES	PROPHYLACTICS	VACCINES	Squalene Anti-Bodies Multiple Vaccinations (Note 3) Adjuvants			
		HEAVY METALS	DEPLETED URANIUM (DU)	Strontium Dust Exposure Smoke From Burning Vehicles		
		CHEMICALS	ORGANOCHLORIDES PESTICIDES BLISTERING AGENTS OTHERS	Sarin, Cyclozarin Carbamates, Repellents (Note 4) Sulfur Mustard Gas Solvents, Jet Fuel, CARC paint Nerve Agents Mycoplasmal Infection Sand Fly Fever Virus	NEURO-COGNITIVE FATIGUE MEMORY PROBLEMS POST-EXERTIONAL MALAISE POOR SLEEP MOOD DISORDERS MUSCULAR-SKELETAL JOINT PAIN/ STIFFNESS GENERAL MUSCLE ACHES/PAIN TINGLING EXTREMITIES LOW IMPACT INJURIES MYOPLASMA INFECTION PSYCHOPHYSIOLOGICAL HEADACHES SORE THROAT GASTRO INTESTINAL PROBLEMS RESPIRATORY PROBLEMS SKIN PROBLEMS (Note 7)	SEE CHART OF OFFICE OF RESEARCH AND DEVELOPMENT SUPPORT OF ONGOING GW RESEARCH PROJECTS
		BIOLOGICALS	VECTORS	Mycoplasmal Infection Sand Fly Fever Virus		
		ENVIRONMENTALS	MYCOPLASMA BRUSCELLOSIS	Also an Iraq Biological Weapon		
		ENVIRONMENTALS	PETROCHEMICAL FIRES/ SMOKE	Burning Vehicles Oil Wells Sand From Fuel Trucks/local		
		ENVIRONMENTALS	PARTICULATES WATER			
		ENVIRONMENTALS	WEATHER OIL WELL FIRES	Rain, Heat, Sand Storms Smoke/Particulate Inhibition		
		BIOLOGICALS	FATIGUE BATTLEFIELD EXPERIENCE GENETIC RESPONSE IMMUNOLOGICAL RESPONSE	Lack of or Disruptive Sleep Seeing Dead People or Killing Positive/Negative to Exposures Positive/Negative to Exposures		
		PSYCHOLOGICALS	TRAUMA and COMBAT STRESS DEPLOYMENT STRESS GENERAL or OTHER STRESS PSYCHOLOGICAL PROBLEMS	PTSD Including Family Problems Fears and Worries Psychological Illness		

NOTES

- Under MAJOR SYMPTOMS, every possible symptom is not listed, but only those that are significant and specific to most GULF WAR illnesses.
- Stopped at 3 sub-categories (when it could go further in some areas) to identify the important issues, but to also keep the chart simple/less complicated.
- Vaccines: Anthrax, Plague, Botulinum, Typhoid, Cholera, Diphtheria, Pertussis, Tetanus, Meningococcus
- Pesticides: OP, OC, Carbamates, Pyrethroids, Repellents
- LEVEL OF CONTACT (Degree of Exposure) and MULTIPLE EXPOSURES (2 or more) in conjunction at times possibly with STRESS are factors to be considered when analyzing the symptoms in individuals. (Degree of Exposure: Verified exposures; possible and/or self-reported, unverified exposures; non-exposed)
- If people were with forward deployed forces (combat/combat support), they are more likely to have multiple exposures, stressors, and higher levels of contact. It is important that all studies distinguish between people forward deployed from other types of deployments or the study results/outcomes might be viewed as irrelevant. Simply referencing deployed from non-deployed, leads to irrelevant data, as outcomes usually mirror the general population.
- The following were not used but could be added to the list: Somatoform Disorders, Cognitive Problems, Neurological Problems, Sleep Disorders, Chronic Widespread Pain, Immunological Recall, Myalgia, Arthralgia, Myofascial Pain, Low Bone Density, Carcinogenic Effects, Neurotoxic Effects.
- Research Criteria: a. Addresses one or more symptoms, or b. Addresses one or more diagnoses, or c. Addresses one or more exposure events.
- Gulf War Illness could be caused by Multi-Combination Exposures.
- These Treatment Development Centers: Not typically for treatment (unless in pilot program), but to determine what's working among GW veterans. Locations to be determined.
- Center Purposes: 1. Collect and analyze data on GW veterans/symptom relief. 2. Promising therapies for further research; 3. Create good definitions for studies/outcomes; 3. Define ways of stratifying the GW vets; 4. Focus on evaluation of bio markers and treatments; 5. Engage in pilot clinical research projects.