

## Australian Centre for Posttraumatic Mental Health

### Summary of the Traumatic Stress Literature: 2006

#### Introduction

##### *Purpose and Rationale*

The Australian Centre for Posttraumatic Mental Health (ACPMH) is pleased to provide its fourth annual summary of the traumatic stress literature. It summarises some of the key literature in the field of posttraumatic stress disorder (PTSD) and related conditions published during the calendar year of 2006. The 2003, 2004 and 2005 summaries are also available on our website <http://www.acpmh.unimelb.edu.au>.

Our summary this year is slightly different to previous years. We have included fewer articles and reduced the number of categories this year for simplicity and clarity's sake. We have also made the abstracts available for the first time and they are listed in the 'references' section at the end of this document. Since we do not provide a critique of the research, ACPMH strongly recommends that readers interested in a particular paper obtain a copy of the original and read it for themselves.

ACPMH is very interested in your feedback about the structure, content, and usefulness of this summary. Please email us at [acpmh-info@unimelb.edu.au](mailto:acpmh-info@unimelb.edu.au) and put '2006 Literature Summary' in the subject line.

##### *Search Strategy and Content Overview*

The literature was sourced using standard scientific databases, notably Medline and PsychInfo, with three search descriptors: "posttraumatic stress disorder", "PTSD", and "acute stress disorder". This yielded a total of 1644 papers published during 2006. Most of those selected for inclusion in this annual summary appeared in relatively prestigious journals, although a few are included from less established publications when appropriate. We recognize that the choice is idiosyncratic and that we may have missed some useful papers; nevertheless, we hope it is useful.

A total of 51 articles are included in this year's summary. We have divided the literature into the following areas although some papers often span more than one area:

1. Special issues and reviews
2. Epidemiology
3. Phenomenology, Diagnosis and Assessment
4. Treatment
5. Theory and Mechanisms
6. Biology

#### **1. Special Issues and Reviews**

The Journal of Pediatric Psychology (Vol.31, No.4) ran a Special Issue on Posttraumatic Stress in Children this year, with review papers on many aspects of assessment and treatment by most

of the leading authors in the area of trauma and children. The Journal of Traumatic Stress (Vol.19, No.4) ran a special section on the topic of dissemination.

A useful overview of the field was provided by Nemeroff et al. They review latest research in PTSD in the areas of: sex differences, risk and resilience, impact of trauma in early life, imaging studies, neural circuits and memory, and CBT approaches to treatment.

Literature reviews of several other areas appeared during 2006. Although we have not summarised them here, the abstracts appear below. Topics include:

- Posttraumatic stress following childbirth (Olde et al.)
- Social support and PTSD (Guay et al.)
- Posttraumatic growth (Zoellner et al.)
- Event-related potential studies in PTSD (Karl et al.)
- Structural brain abnormalities in PTSD (Karl et al.)
- Neuroimaging studies in PTSD (Lanius et al.)
- Measures of PTSD for children and adolescents (Hawkins et al.)
- Posttraumatic stress in childhood cancer survivors and their parents (Bruce)
- Psychological interventions for post-traumatic reactions in children and young people (Stallard)

## **2. Epidemiology**

### *Community Studies*

Building on his increasing body of work around resilience (or stress resistance), Bonnano et al. noted that an absence of symptoms following trauma exposure (in this case the 9/11 terrorist attacks) may be much more common than originally thought. Although less prevalent among more highly exposed individuals, the frequency of resilience (defined as none or one PTSD symptom) never fell below one third, even among the exposure groups with the most dramatic elevations in PTSD.

Such findings, however, should not hide the considerable emotional toll of trauma. Kessler et al. reported that the estimated prevalence of mental illness in the region doubled after Hurricane Katrina. The prevalence of suicidality, however, was unexpectedly low. This seemed to be related to personal growth after the trauma (especially faith in one's own ability to rebuild one's life and realization of inner strength).

Exploring the impact of terrorist threats, Shalev et al. found similar distress levels in Israeli communities regardless of their proximity to the "threat zone". Exposure to discrete events was not a necessary mediator of terror threat but disruption of daily routines was a major secondary stressor associated with poorer outcomes. While a subgroup of those exposed developed serious symptoms, in line with Bonano's findings many people were surprisingly resilient.

Definitive statements regarding risk factors for PTSD are not possible without truly prospective research designs. Breslau et al. explored the utility of data collected at six years of age in predicting PTSD at age 17 in a large US sample. Children with teacher ratings of externalizing problems (such as conduct disorder) at age 6 were at increased risk for exposure to assaultive

violence. Those with an IQ greater than 115 at age 6 had decreased risk for exposure to traumatic events (both interpersonal and other) and a decreased conditional risk for PTSD.

In an attempt to tease out the impact of gender on PTSD, Cortina et al. explored the impact of prior sexual trauma. They found that when sexual victimisation history is included it replaces gender as a key determinant of PTSD symptoms.

In a longitudinal exploration of social support and PTSD, King et al. found a strong negative relationship between PTSD at Time 1 and social support at Time 2. In addition, social support at Time 1 did not predict PTSD at Time 2. These findings question more traditional models that propose poor social support as a risk factor in PTSD. Rather, they suggest that, over time, interpersonal problems associated with PTSD damage the quality and quantity of social support. The results suggest that greater focus should be placed on the interpersonal skills of those suffering from PTSD.

Several studies from non-western countries confirm that constellations of symptoms consistent with PTSD occur across a variety of cultures and precipitating events. For example, Huang et al. studied prisoners in China, while van Griensven et al. looked at survivors of the tsunami in Thailand, with both studies supporting the construct of PTSD. Confirming existing best practice regarding evacuation following disaster, Kilic et al. found that relocation following an earthquake (in Turkey) increased the risk of psychological disorder, possibly due to disruptions in the social network.

### *Military and Veteran Studies*

The work of Hoge and colleagues on troops returning from the middle east has received much attention in recent years. In this paper, published in JAMA, Hoge et al. report that combat duty in Iraq was associated with high mental health symptom levels, high utilization of mental health services, and elevated attrition from military service after deployment.

Data on the role of injury in subsequent PTSD are conflicting. In a study of US soldiers injured in combat, however, Grieger et al. reported that injury severity was strongly associated with later PTSD or depression. Delayed onset was common: the majority of soldiers with PTSD or depression at 7 months did not meet criteria for either condition at 1 month.

In a paper that caused considerable debate, Dohrenwend et al. re-analysed data from the US National Vietnam Veterans Readjustment Study (NVVRS) and checked data from original records where possible. They found little evidence of falsification of wartime exposure and a strong dose-response relationship with subsequent PTSD symptoms. Using DSM-IV criteria, they reported lifetime PTSD rates of 19% (compared with 30% in the original report which used DSM-III-R criteria) and 9% current (compared with 15% in the original report). The key factor seems to have been the inclusion of Criterion F – the requirement for disability. Several letters to the journal in response to this paper argued the validity and implications of these new analyses. Some correspondents argued that the criterion for disability was too liberal – many veterans were meeting the diagnosis despite only low levels of social and occupational impairment.

In a landmark 20-year follow up of Israeli veterans from the Lebanon war, Solomon et al. found that, while those who had experienced combat stress reaction (CSR) at the time were at greater risk of long term problems, nearly one quarter of veterans without CSR had PTSD at the 20-year point.

Exploring the relationship between PTSD and mortality, Boscarino et al. found that Vietnam veterans with PTSD were at increased risk of death from multiple causes. The reasons for this increased mortality were unclear but may be related to biological, psychological, or behavioral factors associated with PTSD. Consistent with those findings, Koenen et al. reported that PTSD represents a nongenetic pathway to late-onset smoking among individuals who were nonsmokers prior to developing PTSD.

### **3. Phenomenology, Diagnosis, and Assessment**

#### *Diagnostic Issues*

In a traumatic injury population, Carty et al. found that nearly half of 12-month PTSD diagnoses were delayed in onset. Importantly, a large majority of the delayed onset cases actually demonstrated subsyndromal diagnoses at the 3-month point.

Comparing gender differences across the DSM-IV and ICD-10 PTSD diagnoses, Peters et al. found a significant difference in the prevalence of PTSD for ICD-10 (with higher rates in females) but no such difference for DSM-IV. This difference was explained primarily by the Criterion C symptoms: females were more likely to meet the one required for ICD (with females more likely to endorse avoidance of thoughts and feelings than males), but not more likely to meet the full three required by DSM.

With regard to the appropriateness of the DSM PTSD criteria for children, Scheeringa et al. found definite support for lowering the requirement of three criterion C symptoms for preschool children and raised questions about the appropriateness of this threshold for prepubertal children. They note the importance of assessing symptoms with combined parent and child reports, which provided much greater diagnostic accuracy than either in isolation.

#### *Comorbidity*

In a meta-analysis of studies looking at anger and PTSD, Orth et al. found a consistently strong relationship between the two. They reported that effect sizes were substantially larger with increasing time since the event, and that effect sizes were larger in samples with military war experience than in samples that had experienced other types of traumatic events.

Comorbid substance abuse is common in PTSD, a finding confirmed by Mills et al. in data from the Australian national mental health survey. One-quarter of people with PTSD also met criteria for alcohol use disorder. Individuals with substance use disorder plus PTSD experienced significantly poorer physical and mental health, and greater disability, than those with substance use disorder alone.

Looking at PTSD and pain, Poundja et al. found that, although the two are moderately related ( $r = .29$ ), this relationship is fully mediated by depression. This suggests that treatment of individuals with both PTSD and pain should include careful assessment and regular monitoring of depression.

#### *Assessment and Diagnosis*

Although the CAPS is considered the “gold standard” assessment measure for PTSD, it is lengthy and complex to administer. Vaishnavi et al. report that the Short PTSD Rating

Interview (SPRINT) performs similarly to the CAPS in the assessment of PTSD symptom clusters and total scores, and that the SPRINT takes significantly less time to administer.

Kenardy et al. recommend a new scale, the Child Trauma Screening Questionnaire, as a quick, cost-effective and valid self-report screening instrument that could be incorporated in a hospital setting to aid in the prevention of childhood posttraumatic stress disorder after accidental trauma.

#### **4. Treatment**

##### *Early Psychological Intervention*

A key question in the debriefing debate has been the relative roles of emotional ventilation and psychoeducation in the process. Exploring this issue, Sijbrandij et al. compared those two approaches to debriefing with a no intervention control in adult survivors of recent trauma. Psychiatric symptoms decreased in all three groups over time, with no significant differences between the groups. However, those participants in the emotional debriefing group with high baseline hyperarousal scores had significantly more PTSD symptoms at 6 weeks than control participants. This finding lends support to previous suggestions that emotional ventilation may be counter-therapeutic for some participants, especially those with high acute symptoms.

In an unexpected finding, Foa et al. found no difference in long term outcomes among female assault survivors with acute PTSD (within four weeks of the assault) between CBT, supportive counseling, and an assessment only condition. Although end state functioning was comparable, recovery was accelerated in the CBT group.

##### *Psychological Treatment for PTSD*

In another counter-intuitive finding, van Minnen and Foa found that short exposure sessions (30 minutes) produced equivalent long term outcomes to longer (60 minute) sessions. Within session habituation was reduced in the shorter condition, but this did not effect post-treatment outcomes.

In the first trial of cognitive processing therapy (CPT) with veterans, Monsoon et al. reported significant improvements in PTSD and comorbid symptoms in the CPT condition compared with the wait-list condition. Forty percent of the intent-to-treat sample receiving CPT did not meet criteria for a PTSD diagnosis, and 50% had a reliable change in their PTSD symptoms at posttreatment assessment. For a chronic veteran PTSD population, these results are very encouraging.

In a meta-analysis comparing EMDR with CBT for PTSD, Seidler and Wagner reported that the two approaches tend to be equally efficacious, although they note that the contribution of the eye movement component in EMDR to treatment outcome remains unclear.

Addressing the issue of comorbidity and sequencing of treatment, Back et al. found that improvements in PTSD had a greater impact on improvement in alcohol dependence symptoms than the reciprocal relationship. They suggest that PTSD treatment may be important to optimizing outcomes for patients with comorbid PTSD and alcohol dependence.

##### *Pharmacotherapy*

One of the most important contributions to the field of pharmacotherapy of PTSD appeared in 2006 with the release of the Cochrane review by Stein et al. While the review supported the status of SSRIs as first line agents in the pharmacotherapy of PTSD, as well as their value in long-term treatment, the authors note important gaps in the evidence base and a need for more effective agents in the management of PTSD.

Adding to the existing data on new generation antidepressants, Davidson et al. found the extended release form of venlafaxine (a SNRI) was effective and well tolerated in short-term and continuation treatment of patients with PTSD.

## **5. Theory and Mechanisms**

Cognitive impairment is often considered as a consequence of traumatic exposure. Gilbertson et al. demonstrated that combat-unexposed co-twins of combat veterans with PTSD largely displayed the same performance as their brothers, which was significantly lower than that of non-PTSD combat veterans and their brothers. The results support the notion that specific domains of cognitive function may serve as premorbid risk or protective factors in PTSD. Similarly, in a case control study of identical twins, Gurvits et al. concluded that subtle neurologic dysfunction in PTSD is not acquired along with the trauma or PTSD but, rather, represents an antecedent familial vulnerability factor for developing chronic PTSD on exposure to a traumatic event.

In support of Ehlers and Clark's theory of PTSD, Fairbrother and Rachman showed that victims' appraisals of sexual assault and its sequelae are strongly and positively related to PTSD symptoms, even after controlling for the perceived severity of the assault. Exploring coping strategies in Jews and Arabs exposed to terrorism, Hobfall et al. found that PTSD symptoms were related to greater authoritarian beliefs and ethnocentrism, suggesting that PTSD may lead to a self-protective style of defensive coping.

In an exploration of repressed and recovered memory, McNally et al. compared clinical characteristics of adults reporting repressed, recovered, or continuous memories of childhood sexual abuse. The three groups were indistinguishable on all clinical and psychometric measures, scoring similarly on measures of anxiety, depression, dissociation, and absorption.

## **6. Biology**

Gamma-aminobutyric acid (GABA) exerts a prominent effect on central adrenergic stress responses in times of high stress and has been associated with acute posttraumatic stress disorder (PTSD). Vaiva et al. found that low plasma GABA levels in the emergency department were associated with higher levels of PTSD at 6 weeks and one year. They propose that higher plasma GABA levels (above 0.20 mmol/ml) in the acute phase may protect against chronic PTSD and may represent a marker of recovery from trauma.

Brain asymmetry in PTSD has been an area of interest for some time. In an EEG study, Rabe et al. compared MVA survivors with and without PTSD and found differences in brain asymmetry between groups only during exposure to trauma-related material. PTSD and subsyndromal PTSD patients showed a pattern of enhanced right anterior and posterior activation, whereas non-PTSD participants showed the opposite pattern. The results support the hypothesis that symptomatic MVA survivors are characterized by a pattern of right hemisphere activation that is associated with anxious arousal and elevated PTSD symptoms during processing of trauma-specific information.

Although increased heart rate (HR) in PTSD is well-documented, the relationship is a complex one. Hopper et al. reported that a substantial proportion of people with PTSD may not have elevated basal HRs and, among those who do, there may be a parasympathetic contribution that is independent of any sympathetic one. Only measuring both branches at once, ideally with autonomic blockades, can definitively address these issues.

In line with some (although not all) of the adult data, Nugent et al. found that increased HR in the ambulance was associated with increased risk for development of PTSD in child trauma victims. These findings provide preliminary support for the use of acute cardiovascular levels as markers of higher risk.

## References

Back, S. E., Brady, K. T., Sonne, S. C., & Verduin, M. L. (2006). Symptom Improvement in Co-Occurring PTSD and Alcohol Dependence. *Journal of Nervous and Mental Disorders, 194* (9), 690-696.

This study investigated the temporal course of improvement in PTSD and alcohol dependence symptoms among individuals participating in a 12-week outpatient treatment study. Participants were 94 individuals with comorbid PTSD and alcohol dependence enrolled in a double-blind, placebo-controlled medication trial. Outcome measures included PTSD symptoms (as measured by the Clinician Administered PTSD Scale, Impact of Events Scale, and Civilian Mississippi Scale for PTSD) and alcohol use severity (as measured by the Time Line Follow Back). Study completion rates were significantly higher for individuals who demonstrated improvement in both disorders. Improvements in PTSD had a greater impact on improvement in alcohol dependence symptoms than the reciprocal relationship. Improvement in hyperarousal PTSD symptoms, in particular, was related to substantially improved alcohol use. Examination of the temporal course of symptom improvement revealed that alcohol symptoms tended to start improving either before or in conjunction with PTSD symptoms. Although preliminary in nature, these findings suggest that co-occurring PTSD symptoms may have a strong impact on alcohol dependence treatment outcome, and that PTSD treatment may be important to optimizing outcomes for patients with comorbid PTSD and alcohol dependence.

Bonanno, G. A., Galea, S., Bucciarelli, A., & Vlahov, D. (2006). Psychological resilience after disaster - New York City in the aftermath of the September 11th terrorist attack. *Psychological Science, 17* (3), 181-186.

Research on adult reactions to potentially traumatic events has focused almost exclusively on posttraumatic stress disorder (PTSD). Although there has been relatively little research on the absence of trauma symptoms, the available evidence suggests that resilience following such events may be more prevalent than previously believed. This study examined the prevalence of resilience, defined as having either no PTSD symptoms or one symptom, among a large (n = 2,752) probability sample of New York area residents during the 6 months following the September 11th terrorist attack. Although many respondents met criteria for PTSD, particularly when exposure was high, resilience was observed in 65.1% of the sample. Resilience was less prevalent among more highly exposed individuals, but the frequency of resilience never fell below one third even among the exposure groups with the most dramatic elevations in PTSD.

Boscarino, J. A. (2006). Posttraumatic stress disorder and mortality among US army veterans 30 years after military service. *Annals of Epidemiology, 16* (4), 248-256.

**PURPOSE:** Research suggests that posttraumatic stress disorder (PTSD) may be associated with later medical morbidity. To assess this, we examined all-cause and cause-specific mortality among a national random sample of U.S. Army veterans with and without PTSD after military service. **METHODS:** We used Cox proportional hazards regressions to examine the causes of death among 15,288 male U.S. Army veterans 16 years after completion of a telephone survey, approximately 30 years after their military service. These men were included in a national random sample of veterans from the Vietnam War Era. Our analyses adjusted for race, Army Volunteer status, Army entry age, Army discharge status, Army illicit drug abuse, intelligence,

age, and, additionally-for cancer mortality- pack-years of cigarette smoking.

**RESULTS:** Our findings indicated that adjusted postwar mortality for all-cause, cardiovascular, cancer, and external causes of death (including motor vehicle accidents, accidental poisonings, suicides, homicides, injuries Of undetermined intent) was associated with PTSD among Vietnam Theater veterans (N = 7,924), with hazards ratios (HRs) of 2.2 (p < 0.001), 1.7 (p = 0.034), 1.9 (p = 0.018), and 2.3 (p 0.001), respectively. For Vietnam Era veterans with no Vietnam service (N = 7,364), PTSD was associated with all-cause mortality (HR = 2.0, p = 0.001). PTSD-positive era veterans also appeared to have an increase in external-cause mortality as well (HR = 2.2, p = 0.073).

**CONCLUSIONS:** Our study suggests that Vietnam veterans with PTSD may be at increased risk of death from multiple causes. The reasons for this increased mortality are unclear but may be related to biological, psychological, or behavioral factors associated with PTSD and warrant further investigation.

Breslau, N., Lucia, V. C., & Alvarado, G. F. (2006). Intelligence and other predisposing factors in exposure to trauma and posttraumatic stress disorder - A follow-up study at age 17 years. *Archives of General Psychiatry*, 63 (11), 1238-1245.

Context: Prospective data on standardized measures of early predispositions would allow a strong test of hypotheses about suspected risk factors of posttraumatic stress disorder ( PTSD) and exposure to traumatic events. Objective: To prospectively examine the extent to which intelligence, anxiety disorders, and conduct problems in childhood influence the risk for PTSD and for exposure to traumatic events. Design: A longitudinal study of a randomly selected sample assessed at age 6 years and followed up to age 17 years. Setting: Samples were randomly selected from the 19831985 newborn discharge lists of 2 major hospitals in southeast Michigan (N= 823). Participants: Cohort members with follow-up data at age 17 years (n= 713; 86.6% of the initial sample). Main Outcome Measures: Cumulative exposure up to age 17 years of qualifying traumatic events; DSM-IV PTSD among participants who have experienced 1 or more traumatic events. Results: Youth with teacher ratings of externalizing problems above the normal range at age 6 years were at increased risk for exposure to assaultive violence (adjusted odds ratio, 2.6; 95% confidence interval, 1.44-9). Youth aged 6 years with an IQ greater than 115 had decreased risk for exposure to traumatic events (adjusted odds ratio for assaultive violence, 0.3; 95% confidence interval, 0.2-0.7); a decreased risk for non-assaultive trauma (adjusted odds ratio, 0.6; 95% confidence interval, 0.3-0.9); and a decreased conditional risk for PTSD (adjusted odds ratio, 0.2; 95% confidence interval, 0.1-0.9). The conditional risk for PTSD was increased for youth with anxiety disorders and teacher ratings of externalizing problems above the normal range at 6 years of age. Conclusions: The results of this prospective community study highlight the role of intelligence in avoidance of exposure to traumatic experiences and their PTSD effects. They underscore the need for investigating cognitive processes in persons' responses to traumatic experiences and the involvement of general intelligence in these processes.

Bruce, M. (2006). A systematic and conceptual review of posttraumatic stress in childhood cancer survivors and their parents. *Clinical Psychology Review*, 26 (3), 233-256.

Recent years have witnessed a rapid acceleration in the recognition and documentation of posttraumatic stress disorder (PTSD) and posttraumatic stress symptomatology (PTSS) in childhood cancer survivors and their parents. However, applicability of PTSD both diagnostically and conceptually to cancer-related traumatic responses remains poorly articulated within the current literature. Following an outline of childhood cancer and PTSD, this paper critically examines the applicability of such a

diagnosis to this clinical population. It then systematically reviews the current evidence base (24 studies) on PTSD and PTSS in childhood cancer survivors and their parents. Prevalence of PTSD and PTSS, as well as associated predictors, in this clinical population varies widely. Findings are considered in the light of a number of contemporary theories of PTSD. Limitations within current conceptualizations of PTSD are highlighted with respect to the nature of cancer as a traumatic event and the specific features of traumatic stress manifestations in childhood cancer survivors and their parents. Finally, a number of pertinent research areas are elucidated which are argued to warrant further investigation. (c) 2005 Elsevier Ltd. All rights reserved.

Carty, J., O'Donnell, M. L., & Creamer, M. (2006). Delayed-onset PTSD: A prospective study of injury survivors. *Journal of Affective Disorders, 90* (2-3), 257-261.

Background: Recent studies have indicated that delayed-onset posttraumatic stress disorder (PTSD) (i.e., the development of PTSD more than 6 months posttrauma) is generally characterised by subsyndromal diagnoses within the first 6 months. This study sought to examine the relationship between sub-clinical levels of PTSD symptoms at 3 months posttrauma and delayed onset PTSD at 12 months in a large sample of traumatic injury survivors. Methods: Three hundred and one consecutively admitted injury survivors were assessed at 3 and 12 months posttrauma. PTSD was diagnosed according to DSM-IV criteria, while partial and subsyndromal diagnoses were based on recent definitions developed by Mylle and Maes [Mylle, J., Maes, M., 2004. Partial posttraumatic stress disorder revisited. *J. Affect. Disord.* 78, 37-48]. Results: Eight percent of participants was diagnosed with 3-month PTSD while 10% was diagnosed with 12-month PTSD. Nearly half (47%) of 12-month PTSD cases were of delayed onset. The majority of those with delayed-onset were diagnosed with partial or subsyndromal PTSD at 3 months. Ten percent of delayed onset cases did not meet partial or subsyndromal criteria. Limitations: As symptoms were not assessed at 6 months (the DSM cut-off for delayed PTSD), it could not be conclusively determined that delayed-onset cases had not developed PTSD between 3 and 6 months posttrauma. Conclusion: A considerable proportion of 12-month PTSD diagnoses was delayed in onset. While most demonstrated 3-month morbidity in the form of partial and subsyndromal diagnoses, a minority did not. Thus, clinicians should consider subthreshold diagnoses as potential risk factors for delayed-onset PTSD. Future research is required to identify factors that may predict delayed-onset PTSD in trauma survivors without evidence of prior PTSD pathology. (c) 2005 Elsevier B.V All rights reserved.

Cortina, L. M., & Kubiak, S. P. (2006). Gender and Posttraumatic Stress: Sexual Violence as an Explanation for Women's Increased Risk. *Journal of Abnormal Psychology, 115* (4), 753-759.

Women are approximately twice as likely as men to develop posttraumatic stress disorder (PTSD), but the cause of this disparity remains unclear. This study evaluated 2 alternative explanations of gender differences in PTSD, one pointing to an intrinsic vulnerability in women and the other emphasizing sexual violence across the life span. To test these competing theories, the authors analyzed National Violence Against Women Survey data from 591 victims of partner aggression. Results suggested that gender, when considered alone, has a small but significant effect on PTSD symptom severity. However, once models factor in sexual victimisation history, the latter replaces gender as a key determinant of PTSD symptoms. These findings argue against theories of "feminine vulnerability," instead linking PTSD risk to sexually violent situations. ((c) 2006 APA, all rights reserved).

Davidson, J., Baldwin, D., Stein, D. J., Kuper, E., Benattia, I., Ahmed, S., Pedersen, R., & Musgnung, J. (2006). Treatment of posttraumatic stress disorder with venlafaxine extended release - A 6-month randomized controlled trial. *Archives of General Psychiatry*, 63 (10), 1158-1165.

Context: No large-scale posttraumatic stress disorder drug trials have been conducted to evaluate treatment effects beyond 12 weeks outside of those with selective serotonin reuptake inhibitors. Objective: To evaluate the efficacy of venlafaxine extended release (ER), a serotonin norepinephrine reuptake inhibitor, in posttraumatic stress disorder. Design: 6-month, double-blind, placebo-controlled trial. Setting: International study at 56 sites. Patients: Adult outpatients (N=329) with a primary diagnosis of posttraumatic stress disorder as defined in the DSM-IV, symptoms for 6 months or longer, and a 17-item Clinician-Administered Posttraumatic Stress Disorder Scale score of 60 or higher. Intervention: Patients randomly assigned to receive flexible doses of venlafaxine ER (37.5-300 mg/d) or placebo for 24 weeks. Main Outcome Measures: Primary measure was the change from baseline in the Clinician-Administered Posttraumatic Stress Disorder Scale score. Secondary measures included remission, defined as a Clinician-Administered Posttraumatic Stress Disorder Scale score of 20 or lower, and changes in symptom cluster scores, frequency of remission, and time to remission. Measures of stress vulnerability, resilience, depression, quality of life, functioning, and global illness severity were also taken. Results: Mean changes from baseline in Clinician-Administered Posttraumatic Stress Disorder Scale total scores at end point were -51.7 for venlafaxine ER and -43.9 for placebo (P=.006). Improvement was significantly greater for the venlafaxine ER group than for the placebo group in cluster scores for reexperiencing (P=.008) and avoidance/numbing (P=.006), but not for hyperarousal. Remission rates were 50.9% for venlafaxine ER and 37.5% for placebo (P=.01). The venlafaxine ER group also showed significantly greater improvement at end point than the placebo group (P <.05) on all other reported outcome measures. The mean maximum daily dose of venlafaxine ER was 221.5 mg/d. Withdrawal rates were similar between groups with no significant difference in dropouts attributable to adverse events. Conclusion: In this study, venlafaxine ER was effective and well tolerated in short-term and continuation treatment of patients with posttraumatic stress disorder.

Dohrenwend, B. P., Turner, J. B., Turse, N. A., Adams, B. G., Koenen, K. C., & Marshall, R. (2006). The psychological risks of Vietnam for US veterans: A revisit with new data and methods. *Science*, 313 (5789), 979-982.

In 1988, the National Vietnam Veterans Readjustment Study (NVVRS) of a representative sample of 1200 veterans estimated that 30.9% had developed posttraumatic stress disorder (PTSD) during their lifetimes and that 15.2% were currently suffering from PTSD. The study also found a strong dose-response relationship: As retrospective reports of combat exposure increased, PTSD occurrence increased. Skeptics have argued that these results are inflated by recall bias and other flaws. We used military records to construct a new exposure measure and to cross-check exposure reports in diagnoses of 260 NVVRS veterans. We found little evidence of falsification, an even stronger dose-response relationship, and psychological costs that were lower than previously estimated but still substantial. According to our fully adjusted PTSD rates, 18.7% of the veterans had developed war-related PTSD during their lifetimes and 9.1% were currently suffering from PTSD 11 to 12 years after the war; current PTSD was typically associated with moderate impairment.

Fairbrother, N., & Rachman, S. (2006). PTSD in victims of sexual assault: test of a major component of the Ehlers-Clark theory. *Journal of Behavior Therapy and Experimental Psychiatry*, 37 (2), 74-93.

We investigated a major component of the Ehlers-Clark theory of post-traumatic stress disorder (PTSD) in a sample of 50 female victims of sexual assault. In particular, we tested the hypothesis that the victims' appraisals of the trauma and its consequences contribute significantly to the persistence of PTSD symptoms. The results indicated that the victims' appraisals of the sexual assault and its sequelae are strongly and positively related to PTSD symptoms. This finding remained significant after statistically controlling for the perceived severity of the assault. Most of the results are consistent with the Ehlers-Clark theory. (c) 2004 Elsevier Ltd. All rights reserved.

Foa, E. B., Zoellner, L. A., & Feeny, N. C. (2006). An evaluation of three brief programs for facilitating recovery after assault. *Journal of Traumatic Stress*, 19 (1), 29-43.

Ninety female recent assault survivors who met symptom criteria for posttraumatic stress disorder (PTSD) were randomized to one of three interventions: Brief Cognitive Behavioral Intervention, which focused on processing the traumatic event (B-CBT); assessment condition (AC); or supportive counseling (SC). Within 4 weeks of an assault, participants met weekly with a therapist for four 2-hr sessions. Across all interventions, participants reported decreases in PTSD symptoms, depression, and anxiety over time. At postintervention, participants in B-CBT reported greater decreases in self-reported PTSD severity and a trend toward lower anxiety than those in SC. At 3-month follow-up, participants in B-CBT evidenced lower general anxiety than those in SC and a trend toward lower self-reported PTSD severity. At last available follow-up (on average, 9-months postassault), all three interventions were generally similar in outcome. These findings suggest that a trauma-focused intervention aimed at those with severe PTSD symptoms after an assault can accelerate recovery.

Gilbertson, M. W., Paulus, L. A., Williston, S. K., Gurvits, T. V., Lasko, N. B., Pitman, R. K., & Orr, S. P. (2006). Neurocognitive function in monozygotic twins discordant for combat exposure: relationship to posttraumatic stress disorder. *Journal of Abnormal Psychology*, 115 (3), 484-495.

Neuropsychological deficits have been reported among trauma survivors with posttraumatic stress disorder (PTSD). It is often assumed that these cognitive difficulties are toxic consequences of trauma exposure. Alternatively, they may reflect preexisting characteristics that contribute to the likelihood of developing PTSD. To address this possibility, the authors evaluated cognitive performance in monozygotic twin pairs who were discordant for combat exposure. Pairs were grouped according to whether the combat-exposed brother developed PTSD. The combat-unexposed cotwins of combat veterans with PTSD largely displayed the same performance as their brothers, which was significantly lower than that of non-PTSD combat veterans and their brothers. The results support the notion that specific domains of cognitive function may serve as premorbid risk or protective factors in PTSD. ((c) 2006 APA, all rights reserved).

Grieger, T. A., Cozza, S. J., Ursano, R. J., Hoge, C., Martinez, P. E., Engel, C. C., & Wain, H. J. (2006). Posttraumatic stress disorder and depression in battle-injured soldiers. *American Journal of Psychiatry*, 163 (10), 1777-1783.

OBJECTIVE: This study examined rates, predictors, and course of probable posttraumatic stress disorder (PTSD) and depression among seriously injured soldiers during and following hospitalization. METHOD: The patients were 613 U.S. soldiers

hospitalized following serious combat injury. Standardized screening instruments were administered 1, 4, and 7 months following injury; 243 soldiers completed all three assessments. Cross-sectional and longitudinal analyses of risk factors were performed. PTSD was assessed with the PTSD Checklist; depression was assessed with the Patient Health Questionnaire. Combat exposure, deployment length, and severity of physical problems were also assessed. RESULTS: At 1 month, 4.2% of the soldiers had probable PTSD and 4.4% had depression; at 4 months, 12.2% had PTSD and 8.9% had depression; at 7 months, 12.0% had PTSD and 9.3% had depression. In the longitudinal cohort, 78.8% of those positive for PTSD or depression at 7 months screened negative for both conditions at 1 month. High levels of physical problems at 1 month were significantly predictive of PTSD (odds ratio=9.1) and depression at 7 months (odds ratio=5.7) when the analysis controlled for demographic variables, combat exposure, and duration of deployment. Physical problem severity at 1 month was also associated with PTSD and depression severity at 7 months after control for 1-month PTSD and depression severity, demographic variables, combat exposure, and deployment length. CONCLUSIONS: Early severity of physical problems was strongly associated with later PTSD or depression. The majority of soldiers with PTSD or depression at 7 months did not meet criteria for either condition at 1 month.

Guay, S., Billette, V., & Marchand, A. (2006). Exploring the links between posttraumatic stress disorder and social support: Processes and potential research avenues. *Journal of Traumatic Stress, 19* (3), 327-338.

Social support after a traumatic event is linked to posttraumatic stress disorder (PTSD). However, little is known about the ways in which social support influences the adaptation to trauma and development of PTSD. The aim of the present article is threefold: to outline the various processes by which social support is linked to PTSD, to review the most relevant research in the field, and to suggest potential future research.

Gurvits, T. V., Metzger, L. J., Lasko, N. B., Cannistraro, P. A., Tarhan, A. S., Gilbertson, M. W., Orr, S. P., Charbonneau, A. M., Wedig, M. M., & Pitman, R. K. (2006). Subtle neurologic compromise as a vulnerability factor for combat-related posttraumatic stress disorder - Results of a twin study. *Archives of General Psychiatry, 63* (5), 571-576. Context: Previous studies have demonstrated subtle neurologic dysfunction in chronic posttraumatic stress disorder (PTSD) manifest as increased neurologic soft signs (NSSs). The origin of this dysfunction is undetermined. Objective: To resolve competing origins of increased NSSs in PTSD, namely, preexisting vulnerability factor vs acquired PTSD sign. Design: Case-control study of identical twins. Setting: A Veterans Affairs and academic medical center (ambulatory). Participants: A convenience sample of male Vietnam veteran twins with (n = 25) and without (n = 24) PTSD and their combat-unexposed identical (monozygotic) cotwins. Interventions: Neurologic examination for 45 NSSs. Main Outcome Measure: Average scores for 45 NSSs, each scored on an ordinal scale from 0 to 3, masked to diagnosis and combat exposure status. Results: There was a significant between-pair main effect of PTSD diagnosis (as determined in the combat-exposed twin) on average NSS score in the absence of a significant combat exposure main effect or diagnosis x exposure interaction. Combat veterans with PTSD had significantly higher NSS scores than combat veterans without PTSD. The "high-risk," unexposed co-twins of the former also had significantly higher NSS scores than the "low-risk," unexposed co-twins of the latter. This result could not be explained by age, number of potentially traumatic lifetime noncombat events, alcoholism, or the presence of a comorbid affective or anxiety disorder. The average NSS score in unexposed co-twins was not significantly

associated with combat severity in combat-exposed twins. Conclusions: These results replicate previous findings of increased NSSs in Vietnam combat veterans with PTSD. Furthermore, results from their combat-unexposed identical co-twins support the conclusion that subtle neurologic dysfunction in PTSD is not acquired along with the trauma or PTSD but rather represents an antecedent familial vulnerability factor for developing chronic PTSD on exposure to a traumatic event.

Hawkins, S. S., & Radcliffe, J. (2006). Current measures of PTSD for children and adolescents. *Journal of Pediatric Psychology, 31* (4), 420-430.

**Objective** To review measures of posttraumatic stress disorder (PTSD) and posttraumatic stress symptoms (PSS) for children and adolescents. **Methods** We reviewed broad-based child mental health journals within the disciplines of pediatrics, child psychology, and trauma, from 1995 to 2004, to identify measures of PTSD and PSS for children and adolescents. The review includes a summary of the psychometric properties and associated features of the measures and the clinical domains and types of studies using each measure. **Results** Seven measures of PTSD and PSS were identified, including clinician-administered interviews and self-report questionnaires. Sixty-five articles containing the measures were categorized into eight trauma domains. We found there is little consensus over measures used within each trauma domain. **Conclusions** Few measures of PTSD and PSS have been designed specifically for young people. Further directions for measurement of PTSD in this age group are discussed to prevent under-diagnosis and under-treatment for youth.

Hobfoll, S. E., Canetti-Nisim, D., & Johnson, R. J. (2006). Exposure to terrorism, stress-related mental health symptoms, and defensive coping among Jews and Arabs in Israel. *Journal of Consulting and Clinical Psychology, 74* (2), 207-218.

The authors conducted a large-scale study of terrorism in Israel via telephone surveys in September 2003 with 905 adult Jewish and Palestinian citizens of Israel (PCIs). Structural equation path modeling indicated that exposure to terrorism was significantly related to greater loss and gain of psychosocial resources and to greater posttraumatic stress disorder (PTSD) and depressive symptoms. Psychosocial resource loss and gain associated with terrorism were, in turn, significantly related to both greater PTSD and depressive symptoms. PCIs had significantly higher levels of PTSD and depressive symptoms than Jews. Further, PTSD symptoms in particular were related to greater authoritarian beliefs and ethnocentrism, suggesting how PTSD may lead to a self-protective style of defensive coping.

Hoge, C. W., Auchterlonie, J. L., & Milliken, C. S. (2006). Mental health problems, use of mental health services, and attrition from military service after returning from deployment to Iraq or Afghanistan. *Jama-Journal of the American Medical Association, 295* (9), 1023-1032.

**Context** The US military has conducted population-level screening for mental health problems among all service members returning from deployment to Afghanistan, Iraq, and other locations. To date, no systematic analysis of this program has been conducted, and studies have not assessed the impact of these deployments on mental health care utilization after deployment. **Objectives** To determine the relationship between combat deployment and mental health care use during the first year after return and to assess the lessons learned from the postdeployment mental health screening effort, particularly the correlation between the screening results, actual use of mental health services, and attrition from military service. **Design, Setting, and Participants** Population-based descriptive study of all Army soldiers and Marines who completed

the routine postdeployment health assessment between May 1, 2003, and April 30, 2004, on return from deployment to Operation Enduring Freedom in Afghanistan ( n= 16 318), Operation Iraqi Freedom ( n= 222 620), and other locations ( n= 64 967). Health care utilization and occupational outcomes were measured for 1 year after deployment or until leaving the service if this occurred sooner. Main Outcome Measures Screening positive for posttraumatic stress disorder, major depression, or other mental health problems; referral for a mental health reason; use of mental health care services after returning from deployment; and attrition from military service. Results The prevalence of reporting a mental health problem was 19.1% among service members returning from Iraq compared with 11.3% after returning from Afghanistan and 8.5% after returning from other locations ( P < .001). Mental health problems reported on the postdeployment assessment were significantly associated with combat experiences, mental health care referral and utilization, and attrition from military service. Thirty-five percent of Iraq war veterans accessed mental health services in the year after returning home; 12% per year were diagnosed with a mental health problem. More than 50% of those referred for a mental health reason were documented to receive follow-up care although less than 10% of all service members who received mental health treatment were referred through the screening program. Conclusions Combat duty in Iraq was associated with high utilization of mental health services and attrition from military service after deployment. The deployment mental health screening program provided another indicator of the mental health impact of deployment on a population level but had limited utility in predicting the level of mental health services that were needed after deployment. The high rate of using mental health services among Operation Iraqi Freedom veterans after deployment highlights challenges in ensuring that there are adequate resources to meet the mental health needs of returning veterans.

Hopper, J. W., Spinazzola, J., Simpson, W. B., & van der Kolk, B. A. (2006). Preliminary evidence of parasympathetic influence on basal heart rate in posttraumatic stress disorder. *Journal of Psychosomatic Research.*, 60 (1), 83-90.

OBJECTIVE: Evidence of elevated basal heart rate (HR) in posttraumatic stress disorder (PTSD) has been interpreted in terms of elevated sympathetic cardiac activity, as have possible increased cardiovascular disease risks and outcomes associated with elevated HR. Yet it is well-established that the parasympathetic branch of the autonomic nervous system not only influences HR independently of the sympathetic branch, but makes a greater contribution to HR, including resting HR. Additionally, abnormally low tonic parasympathetic activity on the heart has been implicated in cardiovascular disease and hypertension. This study addressed a potential parasympathetic contribution to elevated basal HR in PTSD. METHODS: We used a descriptive and subgroup differences approach to investigate relationships between parasympathetic activity and basal HR in 59 adults (50 females) with PTSD, all of whom were participants in a treatment outcome study and assessed prior to exposure to trauma-related script-driven imagery. Consistent with the well-known relationship between parasympathetic activity and HR, we hypothesized that basal respiratory sinus arrhythmia (RSA), a measure of parasympathetic cardiac activity, would be negatively correlated with basal HR. More important, we predicted that pathologically elevated HRs previously associated with PTSD would only characterize a low-RSA subgroup. Potential confounds of age, respiration rate, and aerobic fitness were addressed. RESULTS: As predicted, mean HR was 80.5 bpm in the low-RSA tercile group, similar to mean HRs of PTSD groups in prior research and significantly higher than 69 and 65 bpm in the middle- and high-RSA groups, respectively, which are typical of non-PTSD controls. CONCLUSION: These findings suggest that a substantial proportion of those

with PTSD may not have elevated basal HRs. Furthermore, among those who do exhibit elevated HR, there may be a parasympathetic contribution that is independent of any sympathetic one. Only measuring both branches at once, ideally with autonomic blockades, can definitively address these issues.

Huang, G. P., Zhang, Y. L., Momartin, S., Cao, Y. P., & Zhao, L. (2006). Prevalence and characteristics of trauma and posttraumatic stress disorder in female prisoners in China. *Comprehensive Psychiatry*, *47* (1), 20-29.

Objective: Posttraumatic stress disorder (PTSD) and its relationship with a range of traumatic events have previously been documented within various traumatized groups in Western countries. In the present study, the authors investigated the relationship between the frequency and type of traumatic events and the prevalence of PTSD among female prisoners in China. Method: A structured psychiatric interview, the self-report Traumatic Life Events Questionnaire, and Symptom Checklist-90-Revised were administered to a subset of 471 female members who were randomly selected from Hunan female prison, China. Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV) diagnoses were assigned by consensus after the interviews were evaluated by independent raters. Results: The prevalences of lifetime and current PTSD were 15.9% (n = 75) and 10.6% (n = 50), and 82% (n = 386) of the subjects had experienced at least 1 traumatic event. The whole sample was divided into 2 groups according to age: the younger group (age ≤ 25 years) and the older group (age > 25 years). The most predictive factor for lifetime PTSD among the younger age group was the experience of sudden death of a close friend or a loved one, childhood physical abuse, intimate partner abuse, and sexual abuse before the age of 13 years by someone at least 5 years older. For the older group, the most predictive factors were a history of motor traffic accident, sudden death of a close friend or a loved one, severe assault by acquaintance or stranger, witness to family violence, having experienced more than 5 traumatic events, intimate partner abuse, and sexual abuse before the age of 13 years by someone at least 5 years older. Those females with PTSD tended to demonstrate higher levels of anger/hostility or interpersonal sensitivity than those without either partial or full diagnosis. Conclusions: In this sample of female prisoners in China, although exposure to traumatic events was common and the rate is nearly as high as that in western countries.

Karl, A., Malta, L. S., & Maercker, A. (2006). Meta-analytic review of event-related potential studies in post-traumatic stress disorder. *Biological Psychology*, *71* (2), 123-147.

In recent years there has been an accumulation of studies that have utilized the measurement of event-related potentials (ERP) to examine the neuroelectric correlates of hypothesized alterations in information processing in persons with post-traumatic stress disorder (PTSD). The objective of this meta-analysis was to summarize the findings of ERP PTSD research, including studies that have examined P50 auditory sensory gating, augmenting-reducing P200, and P300 in target detection oddball tasks. The results suggest that persons with PTSD exhibit alterations in the amplitude and latency of ERP within these paradigms that support the hypothesis that changes in information processing can accompany PTSD. The results were also consistent with recent cognitive neuropsychological findings in PTSD research. (c) 2005 Elsevier B.V. All rights reserved.

Karl, A., Schaefer, M., Malta, L. S., Dorfel, D., Rohleder, N., & Werner, A. (2006). A meta-analysis of structural brain abnormalities in PTSD. *Neuroscience and Biobehavioral Review*, *30* (7), 1004-1031.

This series of meta-analyses examined structural abnormalities of the hippocampus and other brain regions in persons with PTSD compared to trauma-exposed and non-exposed control groups. The findings were significantly smaller hippocampal volumes in persons with PTSD compared to controls with and without trauma exposure, but group differences were moderated by MRI methodology, PTSD severity, medication, age and gender. Trauma-exposed persons without PTSD also showed significantly smaller bilateral hippocampal compared to non-exposed controls. Meta-analyses also found significantly smaller left amygdala volumes in adults with PTSD compared to both healthy and trauma-exposed controls, and significantly smaller anterior cingulate cortex compared to trauma-exposed controls. Pediatric samples with PTSD exhibited significantly smaller corpus callosum and frontal lobe volumes compared to controls, but there were no group differences in hippocampal volume. The overall findings suggested a dimensional, developmental psychopathology systems model in which: (1) hippocampal volumetric differences covary with PTSD severity; (2) hippocampal volumetric differences do not become apparent until adulthood; and (3) PTSD is associated with abnormalities in multiple frontal-limbic system structures.

Kenardy, J. A., Spence, S. H., & Macleod, A. C. (2006). Screening for posttraumatic stress disorder in children after accidental injury. *Pediatrics, 118* (3), 1002-1009.

**OBJECTIVE.** Children who have experienced an accidental injury are at increased risk of developing posttraumatic stress disorder. It is, therefore, essential that strategies are developed to aid in the early identification of children at risk of developing posttraumatic stress disorder symptomatology after an accident. The aim of this study was to examine the ability of the Child Trauma Screening Questionnaire to predict children at risk of developing distressing posttraumatic stress disorder symptoms 1 and 6 months after a traumatic accident. **METHODS.** Participants were 135 children (84 boys and 51 girls; with their parents) who were admitted to the hospital after a variety of accidents, including car- and bike-related accidents, falls, burns, dog attacks, and sporting injuries. The children completed the Child Trauma Screening Questionnaire and the Children's Impact of Events Scale within 2 weeks of the accident, and the Anxiety Disorders Interview Schedule for Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Child Version, was conducted with the parents to assess full and subsyndromal posttraumatic stress disorder in their child 1 and 6 months after the accident. **RESULTS.** Analyses of the results revealed that the Child Trauma Screening Questionnaire correctly identified 82% of children who demonstrated distressing posttraumatic stress disorder symptoms (9% of sample) 6 months after the accident. The Child Trauma Screening Questionnaire was also able to correctly screen out 74% of children who did not demonstrate such symptoms. Furthermore, the Child Trauma Screening Questionnaire outperformed the Children's Impact of Events Scale. **CONCLUSIONS.** The Child Trauma Screening Questionnaire is a quick, cost-effective and valid self-report screening instrument that could be incorporated in a hospital setting to aid in the prevention of childhood posttraumatic stress disorder after accidental trauma.

Kessler, R. C., Galea, S., Jones, R. T., & Parker, H. A. (2006). Mental illness and suicidality after Hurricane Katrina. *Bulletin of the World Health Organization, 84* (12), 930-939.

**Objective.** To estimate the impact of Hurricane Katrina on mental illness and suicidality by comparing results of a post-Katrina survey with those of an earlier survey. **Methods.** The National Comorbidity Survey-Replication, conducted between February 2001 and February 2003, interviewed 826 adults in the Census Divisions later affected by Hurricane Katrina. The post-Katrina survey interviewed a new sample of 1043 adults

who lived in the same area before the hurricane. Identical questions were asked about mental illness and suicidality. The post-Katrina survey also assessed several dimensions of personal growth that resulted from the trauma (for example, increased closeness to a loved one, increased religiosity). Outcome measures used were the K6 screening scale of serious mental illness and mild-moderate mental illness and questions about suicidal ideation, plans and attempts. Findings. Respondents to the post-Katrina survey had a significantly higher estimated prevalence of serious mental illness than respondents to the earlier survey (11.3% after Katrina versus 6.1% before;  $\chi^2(1) = 10.9$ ;  $P < 0.001$ ) and mild-moderate mental illness (19.9% after Katrina versus 9.7% before;  $\chi^2(1) = 22.5$ ;  $P < 0.001$ ). Among respondents estimated to have mental illness, though, the prevalence of suicidal ideation and plans was significantly lower in the post-Katrina survey (suicidal ideation 0.7% after Katrina versus 8.4% before;  $\chi^2(1) = 13.1$ ;  $P < 0.001$ ; plans for suicide 0.4% after Katrina versus 3.6% before;  $\chi^2(1) = 6.0$ ;  $P = 0.014$ ). This lower conditional prevalence of suicidality was strongly related to two dimensions of personal growth after the trauma (faith in one's own ability to rebuild one's life, and realization of inner strength), without which between-survey differences in suicidality were insignificant. Conclusion. Despite the estimated prevalence of mental illness doubling after Hurricane Katrina, the prevalence of suicidality was 11 unexpectedly low. The role of post-traumatic personal growth in ameliorating the effects of trauma-related mental illness on suicidality warrants further investigation.

Kilic, C., Aydin, I., Taskintuna, N., Ozcurumez, G., Kurt, G., Eren, E., Lale, T., Ozel, S., & Zileli, L. (2006). Predictors of psychological distress in survivors of the 1999 earthquakes in Turkey: effects of relocation after the disaster. *Acta Psychiatrica Scandinavica*, *114* (3), 194-202.

Objective: Relocations after disasters are known to cause added distress in survivors. This study examined the effects of migration and other factors on psychological status of survivors 4 years after the two severe earthquakes in Turkey. Method: Five hundred and twenty-six adult survivors of the 1999 earthquakes currently living in Ankara were given self-report measures assessing traumatic stress, depression, earthquake experience and social support. Results: The rates of current post-traumatic stress disorder (PTSD) and depression were 25% and 11%, respectively. Although both traumatic stress and depression factors were predicted by some demographic and trauma severity variables, relocation status predicted depression but not traumatic stress. Conclusion: The rates of psychological distress were higher than expected in a city considered to be safe in terms of earthquake risk. Relocation after the disaster may increase psychological distress by disrupting the social network.

King, D. W., Taft, C., King, L. A., Hammond, C., & Stone, E. R. (2006). Directionality of the association between social support and posttraumatic stress disorder: A longitudinal investigation. *Journal of Applied Social Psychology*, *36* (12), 2980-2992.

This study examined the nature of the association between social support and posttraumatic stress disorder (PTSD) symptomatology among 2,249 male veterans of the 1990-1991 Gulf War. Using structural equation modeling, a cross-lagged panel analysis indicated a strong negative relationship between PTSD at Time 1 and social support at Time 2, while social support at Time 1 did not predict PTSD at Time 2. Findings suggest that, over time, interpersonal problems associated with PTSD may have a detrimental influence on the quality and quantity of available social support resources. It is recommended that greater focus be placed on the interpersonal skills of those suffering from PTSD.

Koenen, K. C., Hitsman, B., Lyons, M. J., Stroud, L., Niaura, R., McCaffery, J., Goldberg, J., Eisen, S. A., True, W., & Tsuang, M. (2006). Posttraumatic stress disorder and late-onset smoking in the Vietnam era twin registry. *Journal of Consulting and Clinical Psychology, 74* (1), 186-190.

Epidemiological and clinical studies have consistently reported associations between smoking and posttraumatic stress disorder (PTSD). This study analyzed diagnostic interview data on 6,744 members of the Vietnam Era Twin Registry to clarify the PTSD-smoking relation and to examine whether genetic liability for smoking moderated this relation. Preexisting active (unremitted) PTSD increased risk of late-onset daily smoking. Remitted PTSD decreased risk. Active PTSD increased risk of smoking at all levels of genetic liability; the effect was strongest for those with least genetic liability. This suggests PTSD represents a nongenetic pathway to late-onset smoking among individuals who were nonsmokers prior to developing PTSD. If replicated, these results identify PTSD as a risk factor for smoking that should lead to early tobacco control treatment in this population.

Lanius, R. A., Bluhm, R., Lanius, U., & Pain, C. (2006). A review of neuroimaging studies in PTSD: heterogeneity of response to symptom provocation. *Journal of Psychiatric Research, 40* (8), 709-729.

Different experiential, psychophysiological, and neurobiological responses to traumatic symptom provocation in posttraumatic stress disorder (PTSD) have been reported in the literature. Two subtypes of trauma response have been hypothesized, one characterized predominantly by hyperarousal and the other primarily dissociative, each one representing unique pathways to chronic stress-related psychopathology. Recent PTSD neuroimaging findings in our own laboratory support this notion and are consistent with the view that grouping all PTSD subjects, regardless of their different symptom patterns, in the same diagnostic category may interfere with our understanding of posttrauma psychopathology. This review will integrate findings of different experiential, psychophysiological, and neurobiological responses to traumatic symptom provocation with the clinical symptomatology and the neurobiology of PTSD.

McNally, R. J., Perlman, C. A., Ristuccia, C. S., & Clancy, S. A. (2006). Clinical characteristics of adults reporting repressed, recovered, or continuous memories of childhood sexual abuse. *Journal of Consulting & Clinical Psychology, 74* (2), 237-242. The authors assessed women and men who either reported continuous memories of their childhood sexual abuse (CSA, n = 92), reported recovering memories of CSA (n = 38), reported believing they harbored repressed memories of CSA (n = 42), or reported never having been sexually abused (n = 36). Men and women were indistinguishable on all clinical and psychometric measures. The 3 groups that reported abuse scored similarly on measures of anxiety, depression, dissociation, and absorption. These groups also scored higher than the control group. Inconsistent with betrayal trauma theory, recovered memory participants were not more likely to report abuse by a parent or stepparent than were continuous memory participants. Rates of depression and posttraumatic stress disorder did not differ between the continuous and recovered memory groups. Copyright 2006 APA

Mills, K. L., Teesson, M., Ross, J., & Peters, L. (2006). Trauma, PTSD, and substance use disorders: Findings from the Australian National Survey of Mental Health and Well-Being. *American Journal of Psychiatry, 163* (4), 652-658.

Objective: The aim of the present study was to examine the association between trauma and posttraumatic stress disorder (PTSD) and substance use disorders and to examine

the correlates of substance use disorder plus PTSD comorbidity in the Australian general population. Method: Data were collected from a stratified sample of 10,641 participants as part of the Australian National Survey of Mental Health and Well-Being. A modified version of the Composite International Diagnostic Interview was used to determine the presence of DSM-IV anxiety, affective, and substance use disorders and ICD-10 personality disorders. Results: Substance use disorder plus PTSD was experienced by a significant minority of the Australian general population ( 0.5%). Among those with PTSD, the most common substance use disorder was an alcohol use disorder ( 24.1%), whereas among those with a substance use disorder, PTSD was most common among individuals with an opioid use disorder ( 33.2%). Consistent with U. S. clinical literature, individuals with substance use disorder plus PTSD experience significantly poorer physical and mental health and greater disability than those with substance use disorder alone. In contrast, individuals with PTSD alone and those with substance use disorder plus PTSD shared a remarkably similar clinical profile. Conclusions: It is important that individuals entering treatment for substance use disorder or PTSD be assessed for this comorbidity. The addition of either disorder may present complications that need to be considered for the provision of appropriate treatment. Further research is necessary to ascertain which treatments are most effective in treating comorbid substance use disorder plus PTSD.

Monson, C. M., Schnurr, P. P., Resick, P. A., Friedman, M. J., Young-Xu, Y., & Stevens, S. P. (2006). Cognitive processing therapy for veterans with military-related posttraumatic stress disorder. *Journal of Consulting and Clinical Psychology, 74* (5), 898-907. Sixty veterans (54 men, 6 women) with chronic military-related posttraumatic stress disorder (PTSD) participated in a wait-list controlled trial of cognitive processing therapy (CPT). The overall dropout rate was 16.6% (20% from CPT, 13% from waiting list). Random regression analyses of the intention-to-treat sample revealed significant improvements in PTSD and comorbid symptoms in the CPT condition compared with the wait-list condition. Forty percent of the intention-to-treat sample receiving CPT did not meet criteria for a PTSD diagnosis, and 50% had a reliable change in their PTSD symptoms at posttreatment assessment. There was no relationship between PTSD disability status and outcomes. This trial provides some of the most encouraging results of PTSD treatment for veterans with chronic PTSD and supports increased use of cognitive- behavioral treatments in this population. ((c) 2006 APA, all rights reserved).

Nemeroff, C. B., Bremner, J. D., Foa, E. B., Mayberg, H. S., North, C. S., & Stein, M. B. (2006). Posttraumatic stress disorder: A state-of-the-science review. *Journal of Psychiatric Research, 40* (1), 1-21. This article reviews the state-of-the-art research in posttraumatic stress disorder (PTSD) from several perspectives: (1) Sex differences: PTSD is more frequent among women, who tend to have different types of precipitating traumas and higher rates of comorbid panic disorder and agoraphobia than do men. (2) Risk and resilience: The presence of Group C symptoms after exposure to a disaster or act of terrorism may predict the development of PTSD as well as comorbid diagnoses. (3) Impact of trauma in early life: Persistent increases in CRF concentration are associated with early life trauma and PTSD, and may be reversed with paroxetine treatment. (4) Imaging studies: Intriguing findings in treated and untreated depressed patients may serve as a paradigm of failed brain adaptation to chronic emotional stress and anxiety disorders. (5) Neural circuits and memory: Hippocampal volume appears to be selectively decreased and hippocampal function impaired among PTSD patients. (6) Cognitive behavioral approaches: Prolonged exposure therapy, a readily disseminated treatment modality, is

effective in modifying the negative cognitions that are frequent among PTSD patients. In the future, it would be useful to assess the validity of the PTSD construct, elucidate genetic and experiential contributing factors (and their complex interrelationships), clarify the mechanisms of action for different treatments used in PTSD, discover ways to predict which treatments (or treatment combinations) will be successful for a given individual, develop an operational definition of remission in PTSD, and explore ways to disseminate effective evidence-based treatments for this condition. (c) 2005 Elsevier Ltd. All rights reserved.

Nugent, N. R., Christopher, N. C., & Delahanty, D. L. (2006). Emergency medical service and in-hospital vital signs as predictors of subsequent PTSD symptom severity in pediatric injury patients. *Journal of Child Psychology and Psychiatry*, 47 (9), 919-926.

The present study investigated the extent to which heart rate (HR) levels soon after a traumatic event predicted posttraumatic stress disorder (PTSD) symptom severity assessed 6 weeks and 6 months later in child trauma victims. Participants consisted of 82 children (56 boys, 26 girls) aged 8-18 who were admitted to a Midwestern trauma center. HR data were recorded from emergency medical services (EMS) records, upon admission to the emergency department (ED), for the first 20 minutes following admission, and upon discharge. Subsequent PTSD and depressive symptoms were assessed 6-weeks and 6-months post-trauma. HR recorded during EMS transport was significantly correlated with PTSD symptoms at 6 weeks ( $r = .42$ ) and at 6 months ( $r = .35$ ). After removing the variance associated with demographic variables and depressive symptoms, HR during EMS transport and averaged over the first 20 minutes following admission significantly predicted 6-week PTSD symptoms. The first recorded EMS HR measure significantly predicted 6-month PTSD symptoms. HR averaged over the first 20 minutes of EMS transport and averaged over the first 20 minutes following admission marginally predicted 6-month PTSD symptoms ( $ps = .051$  and  $.079$ , respectively). The present findings suggest that physiological arousal soon after a traumatic event may be associated with increased risk for the development of PTSD symptoms in child trauma victims. These findings provide preliminary support for the use of acute cardiovascular levels as markers of child trauma victims at higher risk of developing symptoms of PTSD.

Olde, E., van der Hart, O., Kleber, R., & van Son, M. (2006). Posttraumatic stress following childbirth: A review. *Clinical Psychology Review*, 26 (1), 1-16.

To assess the empirical basis of prevalence and risk factors of childbirth-related posttraumatic stress symptoms and PTSD in mothers, the relevant literature was critically reviewed. A MEDLINE and PSYCHLIT search using the key words "posttraumatic stress", "PTSD", "childbirth" and "traumatic delivery" was performed. The generated list of articles was supplemented by a review of their bibliographies. A total of 31 articles was selected. The primary inclusion criterion was report of posttraumatic stress symptoms or PTSD specifically related to childbirth. Case studies and quantitative studies on regular childbirth and childbirth by emergency cesarean section were identified. Consistency among studies was found with regard to development of posttraumatic stress symptoms as a consequence of traumatic delivery. Methodological issues concerning prevalence and risk factors were discussed. Case studies and quantitative studies confirm that childbirth may be experienced as so emotionally intense that it can lead to the development of posttraumatic stress symptoms or even a PTSD-profile. Among the identified risk factors were a history of psychological problems, trait anxiety, obstetric procedures, negative aspects in staff-mother contact, feelings of loss of control over the situation, and lack of partner

support. The conclusion of the current review is twofold. First, traumatic reactions to childbirth are an important public health issue. Secondly, studying childbirth offers opportunity to prospectively study the development of posttraumatic stress reactions. (c) 2005 Elsevier Ltd. All rights reserved.

Orth, U., & Wieland, E. (2006). Anger, hostility, and posttraumatic stress disorder in trauma-exposed adults: a meta-analysis. *Journal of Consulting and Clinical Psychology, 74* (4), 698-706.

This meta-analysis synthesizes the available data on the strength of association between anger and posttraumatic stress disorder (PTSD) and between hostility and PTSD, covering 39 studies with trauma-exposed adults. Effect sizes did not differ for anger and hostility, which could therefore be combined; effect sizes for anger expression variables were analyzed separately. The analyses revealed large effects. The weighted mean effect size ( $r$ ) was .48 for anger-hostility, .29 for anger out, .53 for anger in, and .44 for anger control. Moderator analyses were conducted for anger-hostility, showing that effect sizes were substantially larger with increasing time since the event and that effect sizes were larger in samples with military war experience than in samples that had experienced other types of traumatic events. ((c) 2006 APA, all rights reserved).

Peters, L., Issakidis, C., Slade, T., & Andrews, G. (2006). Gender differences in the prevalence of DSM-IV and ICD-10 PTSD. *Psychological Medicine, 36* (1), 81-89.

Background. Gender differences in the prevalence of post-traumatic stress disorder were examined by analysing discrepancies between the DSM-IV and ICD-10 diagnostic systems. Method. Data from the Australian National Survey of Mental Health and Well-Being ( $n = 10641$ ) were analysed at the diagnostic, criterion and symptom level for DSM-IV and ICD-10 PTSD for males versus females. Results. While there was a significant gender difference in the prevalence of PTSD for ICD-10, no such difference was found for DSM-IV. The pattern of gender difference at the diagnostic level was mirrored in the pattern of gender differences at the criterion level for both DSM-IV and ICD-10. Females only endorsed three symptoms at a significantly higher rate than males. For all other symptoms, endorsement was equal. This apparently small gender difference at the symptom level was sufficient to cause the gender difference at the diagnostic level for ICD-10, but not DSM-IV because of the different manner in which symptoms are configured into criteria in each of the diagnostic systems. Conclusions. Gender differences in ICD-10 PTSD but not in DSM PTSD diagnoses are attributable in this study to different patterns of endorsement of symptoms by males and females. Possible reasons for the differential endorsement of symptoms and implications for the use of epidemiological instruments are discussed.

Poundja, J., Fikretoglu, D., & Brunet, A. (2006). The co-occurrence of posttraumatic stress disorder symptoms and pain: Is depression a mediator? *Journal of Traumatic Stress, 19* (5), 747-751.

Although recent studies suggest that posttraumatic stress disorder (PTSD) symptoms and pain may be related, the possible mediational role of depression in this relationship has not been examined. This study sought to examine this question in a sample of 130 male veterans seeking assessment or treatment for deployment-related PTSD. Results suggest that PTSD and pain are moderately related ( $r = .29$ ) but that this relationship is fully mediated by depression. Our findings have important clinical implications: Treatment of PTSD and pain in veteran populations should include careful assessment and regular monitoring of depression.

Rabe, S., Beauducel, A., Zollner, T., Maercker, A., & Karl, A. (2006). Regional brain electrical activity in posttraumatic stress disorder after motor vehicle accident. *Journal of Abnormal Psychology, 115* (4), 687-698.

This study examined whether patients with posttraumatic stress disorder (PTSD) related to motor vehicle accidents (MVAs) would show an abnormal pattern of electroencephalographic (EEG) alpha asymmetries, which has been proposed for particular types of anxiety. Patients with PTSD (n = 22) or subsyndromal PTSD (n = 21), traumatized controls without PTSD (non-PTSD with MVA; n = 21), and healthy controls without MVA (n = 23) underwent measurement of EEG activity during baseline and exposure to a neutral, a positive, a negative, and an accident-related picture. Differences in brain asymmetry between groups were observed only during exposure to trauma-related material. PTSD and subsyndromal PTSD patients showed a pattern of enhanced right anterior and posterior activation, whereas non-PTSD with MVA participants showed the opposite pattern. Furthermore, posterior asymmetry in nontraumatized healthy controls varied with gender, with female participants showing a pattern of higher right posterior activation. The results support the hypothesis that symptomatic MVA survivors are characterized by a pattern of right hemisphere activation that is associated with anxious arousal and symptoms of PTSD during processing of trauma-specific information. ((c) 2006 APA, all rights reserved).

Scheeringa, M. S., Wright, M. J., Hunt, J. P., & Zeanah, C. H. (2006). Factors affecting the diagnosis and prediction of PTSD symptomatology in children and adolescents. *American Journal of Psychiatry, 163* (4), 644-651.

Objective: In a cohort that spanned all of childhood and suffered equivalent types of traumas, the authors examined diagnostic validity and risk factors for posttraumatic stress disorder (PTSD). For older children, parent-child agreement was investigated. Method: Sixty-two children ages 0-18 years who were hospitalized with injuries were assessed 2 months later for PTSD. Mothers were interviewed, and concurrent interviews were conducted with 24 adolescents. Results: Children did not attain the DSM-IV threshold of three criterion C items until age 7. The 0-6-year-old group had significantly fewer criterion C symptoms (mean=0.43) than the 12-18-year-olds (mean=1.17). The impact of altering thresholds for criteria C and D was examined. Older children reported symptoms meeting criterion B significantly more often (79.2%) than parents (45.8%). Combined parent-child reports yielded significantly more symptoms and higher rates for criteria B, C, and D (almost a twofold increase) and for the overall diagnosis (37.5%) than parent report alone (4.2%). This 8.9-fold increase in diagnosis from combined reports suggests that the diagnostic rates for children who cannot make self-reports may greatly underestimate the true numbers. The interaction between pretrauma externalizing behavior and witnessing a threat to a caregiver had a significant effect on the total number of PTSD symptoms. Conclusions: These findings provide additional support for lowering the requirement of three criterion C symptoms for preschool children and raise questions about the appropriateness of this threshold for prepubertal children. The validity of studies that do not assess symptoms with combined parent and child reports is limited.

Seidler, G. H., & Wagner, F. E. (2006). Comparing the efficacy of EMDR and trauma-focused cognitive-behavioral therapy in the treatment of PTSD: a meta-analytic study. *Psychological Medicine, 36* (11), 1515-1522.

Background. Eye movement desensitization and reprocessing (EMDR) and trauma-focused cognitive-behavioral therapy (CBT) are both widely used in the treatment of post-traumatic stress disorder (PTSD). There has, however, been debate regarding the

advantages of one approach over the other. This study sought to determine whether there was any evidence that one treatment was superior to the other. Method. We performed a systematic review of the literature dating from 1989 to 2005 and identified eight publications describing treatment outcomes of EMDR and CBT in active-active comparisons. Seven of these studies were investigated meta-analytically. Results. The superiority of one treatment over the other could not be demonstrated. Trauma-focused CBT and EMDR tend to be equally efficacious. Differences between the two forms of treatment are probably not of clinical significance. While the data indicate that moderator variables influence treatment efficacy, we argue that because of the small number of original studies, little benefit is to be gained from a closer examination of these variables. Further research is needed within the framework of randomized controlled trials. Conclusions. Our results suggest that in the treatment of PTSD, both therapy methods tend to be equally efficacious. We suggest that future research should not restrict its focus to the efficacy, effectiveness and efficiency of these therapy methods but should also attempt to establish which trauma patients are more likely to benefit from one method or the other. What remains unclear is the contribution of the eye movement component in EMDR to treatment outcome.

Shalev, A. Y., Tuval, R., Frenkiel-Fishman, S., Hadar, H., & Eth, S. (2006). Psychological responses to continuous terror: A study of two communities in Israel. *American Journal of Psychiatry*, 163 (4), 667-673.

Objective: The authors evaluated psychological responses to continuous terror. Method: Data were collected after 10 months of escalating hostilities against civilians in Israel. The study's participants were randomly selected adults living in two suburbs of Jerusalem, one frequently and directly exposed to acts of terrorism ( N=167) and the other indirectly exposed ( N=89). Participants provided information about exposure to terror-related incidents, disruption of daily living, symptoms of posttraumatic stress disorder ( PTSD), and general distress ( assessed with the Brief Symptom Inventory). Results: Residents of the directly exposed community reported more frequent exposure to terror and deeper disruption of daily living. Notwithstanding, the directly and indirectly exposed groups reported comparable rates of PTSD and similar levels of symptoms: 26.95% of the directly exposed group and 21.35% of the indirectly exposed group met DSM-IV PTSD symptom criteria ( criteria B through D), and about one-third of those with PTSD symptoms ( 35.7% in the directly exposed group and 31.5% in the indirectly exposed group) reported significant distress and dysfunction. Subjects who did not meet PTSD symptom criteria had very low levels of PTSD symptoms, and their Brief Symptom Inventory scores were within population norms. Exposure and disruption of daily living contributed to PTSD symptoms in the directly exposed group. Disruption of daily routines contributed to Brief Symptom Inventory scores in both groups. Conclusions: Continuous terror created similar distress in proximal and remote communities. Exposure to discrete events was not a necessary mediator of terror threat. A subgroup of those exposed developed serious symptoms, whereas others were surprisingly resilient. Disruption of daily routines was a major secondary stressor.

Sijbrandij, M., Olf, M., Reitsma, J. B., Carlier, I. V. E., & Gersons, B. P. R. (2006). Emotional or educational debriefing after psychological trauma - Randomised controlled trial. *British Journal of Psychiatry*, 189 150-155.

Background: Recent studies show that individual single-session psychological debriefing does not prevent and can even aggravate symptoms of post-traumatic stress disorder (PTSD). Aims: We studied the effect of emotional ventilation debriefing and educational debriefing v. no debriefing on symptoms of PTSD, anxiety and depression.

Method: We randomised 236 adult survivors of a recent traumatic event to either emotional ventilation debriefing, educational debriefing or no debriefing (control) and followed up at 2 weeks, 6 weeks and 6 months. Results: Psychiatric symptoms decreased in all three groups over time, without significant differences between the groups in symptoms of PTSD ( $P=0.33$ ). Participants in the emotional debriefing group with high baseline hyperarousal score had significantly more PTSD symptoms at 6 weeks than control participants ( $P=0.005$ ). Conclusions: Our study did not provide evidence for the usefulness of individual psychological debriefing in reducing symptoms of PTSD, anxiety and depression after psychological trauma.

Solomon, Z., & Mikulincer, M. (2006). Trajectories of PTSD: A 20-year longitudinal study. *American Journal of Psychiatry*, 163 (4), 659-666.

Objective: This study assessed the psychopathological effects of combat in veterans with and without combat stress reaction. Method: Veterans (  $N=214$ ) from the 1982 Lebanon War were assessed in a prospective longitudinal design: 131 suffered from combat stress reaction during the war, and 83 did not. They were evaluated 1, 2, 3, and 20 years after the war. Results: Combat stress reaction is an important vulnerability marker. Veterans with combat stress reaction were 6.6 times more likely to endorse posttraumatic stress disorder ( PTSD) at all four measurements, their PTSD was more severe, and they were at increased risk for exacerbation/reactivation. A qualitative analysis of the profile of PTSD symptoms revealed some time-related changes in the symptom configuration of veterans who did not suffer from combat stress reaction. In both groups, the course fluctuated; PTSD rates dropped 3 years postwar and rose again 17 years later; 23% of veterans without combat stress reaction reported delayed PTSD. Conclusions: These findings suggest that the detrimental effects of combat are deep and enduring and follow a complex course, especially in combat stress reaction casualties. The implications of aging and ongoing terror in impeding recovery from the psychological wounds of war are discussed.

Stallard, P. (2006). Psychological interventions for post-traumatic reactions in children and young people: A review of randomised controlled trials. *Clinical Psychology Review*, 26 (7), 895-911.

Children exposed to a wide range of traumatic events suffer significant post-traumatic reactions. Randomised controlled trials assessing the effectiveness of interventions with traumatised children are described, the limitations of the current literature base identified and issues regarding the applicability of these findings and interventions to everyday clinical practice discussed. Methodological issues, variations in interventions, parental involvement, theoretical underpinning and outcomes will be discussed and implications for future studies highlighted. (c) 2006 Elsevier Ltd. All rights reserved.

Stein, D. J., Ipser, J. C., & Seedat, S. (2006). Pharmacotherapy for post traumatic stress disorder (PTSD).[update of Cochrane Database Syst Rev. 2000;(4):CD002795; PMID: 11034765]. *Cochrane Database of Systematic Reviews*. (1), CD002795.

BACKGROUND: Post traumatic stress disorder (PTSD) is a prevalent and disabling disorder. Evidence that PTSD is characterised by specific psychobiological dysfunctions has contributed to a growing interest in the use of medication in its treatment. OBJECTIVES: To assess the effects of medication for post traumatic stress disorder. SEARCH STRATEGY: We searched the Cochrane Depression, Anxiety and Neurosis Group specialised register (CCDANCTR-Studies) on 18 August 2005, the Cochrane Central Register of Controlled Trials (CENTRAL) (The Cochrane Library issue 4, 2004), MEDLINE (January 1966 to December 2004), PsycINFO (1966 to

2004), and the National PTSD Center Pilots database. Reference lists of retrieved articles were searched for additional studies. **SELECTION CRITERIA:** All randomised controlled trials (RCTs) of pharmacotherapy for PTSD. **DATA COLLECTION AND ANALYSIS:** Two raters independently assessed RCTs for inclusion in the review, collated trial data, and assessed trial quality. Investigators were contacted to obtain missing data. Summary statistics were stratified by medication class, and by medication agent for the selective serotonin reuptake inhibitors (SSRIs). Dichotomous and continuous measures were calculated using a random effects model, heterogeneity was assessed, and subgroup/sensitivity analyses were undertaken. **MAIN RESULTS:** 35 short-term (14 weeks or less) RCTs were included in the analysis (4597 participants). Symptom severity for 17 trials was significantly reduced in the medication groups, relative to placebo (weighted mean difference -5.76, 95% confidence intervals (CI) -8.16 to -3.36, number of participants (N) = 2507). Similarly, summary statistics for responder status from 13 trials demonstrated overall superiority of a variety of medication agents to placebo (relative risk 1.49, 95% CI 1.28 to 1.73, number needed to treat = 4.85, 95% CI 3.85 to 6.25, N = 1272). Medication and placebo response occurred in 59.1% (N = 644) and 38.5% (628) of patients, respectively. Of the medication classes, evidence of treatment efficacy was most convincing for the SSRIs. Medication was superior to placebo in reducing the severity of PTSD symptom clusters, comorbid depression and disability. Medication was also less well tolerated than placebo. A narrative review of 3 maintenance trials suggested that long term medication may be required in treating PTSD. **AUTHORS' CONCLUSIONS:** Medication treatments can be effective in treating PTSD, acting to reduce its core symptoms, as well as associated depression and disability. The findings of this review support the status of SSRIs as first line agents in the pharmacotherapy of PTSD, as well as their value in long-term treatment. However, there remain important gaps in the evidence base, and a continued need for more effective agents in the management of PTSD.

Vaishnavi, S., Payne, V., Connor, K., & Davidson, J. R. T. (2006). A comparison of the SPRINT and CAPS assessment scales for posttraumatic stress disorder. *Depression and Anxiety*, 23 (7), 437-440.

The Clinician-Administered PTSD Scale for DSM-IV (CAPS) is a widely used assessment tool for (posttraumatic stress disorder) (PTSD). However, a shorter assessment tool may be beneficial for clinical work. Here, we compare such a tool, the Short PTSD Rating Interview (SPRINT) to the CAPS. We found that the SPRINT rating scale performs similarly to the CAPS rating scale in the assessment of PTSD symptom clusters and total scores, and that the SPRINT takes significantly less time to administer than the CAPS. *Depression and Anxiety* 23:437-440, 2006. (c) 2006 Wiley-Liss, Inc.

Vaiva, G., Boss, V., Ducrocq, F., Fontaine, M., Devos, P., Brunet, A., Laffargue, P., Goudemand, M., & Thomas, P. (2006). Relationship Between Posttrauma GABA Plasma Levels and PTSD at 1-Year Follow-Up. *American Journal of Psychiatry*, 163 (8), 1446-1448.

**OBJECTIVE:** Gamma-aminobutyric acid (GABA) exerts a prominent effect on central adrenergic stress responses in times of high stress and has been associated with acute posttraumatic stress disorder (PTSD). The authors examined the association between low posttrauma plasma GABA levels and long-term PTSD. **METHOD:** Plasma GABA levels were measured in 78 victims of road traffic accidents who met criteria for trauma exposure on arrival at a trauma department and were admitted for at least 3 days.

Patients were assessed for PTSD and major depressive disorder at 6-week and 1-year follow-ups. RESULTS: At 6 weeks and at 1 year, mean posttrauma GABA levels were significantly lower among subjects who met all or nearly all criteria for PTSD than among those who did not. Among patients who met all or nearly all criteria for PTSD at 6 weeks, 75% of those with posttrauma GABA levels above 0.20 mmol/ml no longer met criteria at 1 year. By contrast, among patients whose GABA levels were below 0.20 mmol/ml, 80% met all or nearly all criteria for PTSD at 1 year. Two-thirds of patients who met all or nearly all criteria for PTSD at 1 year also met criteria for major depressive disorder. CONCLUSIONS: A plasma GABA level above 0.20 mmol/ml may protect against chronic PTSD and may represent a marker of recovery from trauma.

van Griensven, F., Chakkraband, M. L. S., Thienkrua, W., Pengjuntr, W., Cardozo, B. L., Tantipiwatanaskul, P., Mock, P. A., Ekassawin, S., Varangrat, A., Gotway, C., Sabin, M., & Tappero, J. W. (2006). Mental health problems among adults in tsunami-affected areas in southern Thailand. *Jama-Journal of the American Medical Association*, 296 (5), 537-548.

Context On December 26, 2004, an undersea earthquake occurred off the northwestern coast of Sumatra, Indonesia. The tsunami that followed severely affected all 6 southwestern provinces of Thailand, where 5395 individuals died, 2991 were unaccounted for, and 8457 were injured. Objective To assess the prevalence of symptoms of posttraumatic stress disorder (PTSD), anxiety, and depression among individuals residing in areas affected by the tsunami in southern Thailand as part of a public health emergency response and rapid assessment. Design, Setting, and Participants A multistage, cluster, population-based mental health survey was conducted from February 15 to 22, 2005, of random samples of displaced (n=371) and nondisplaced persons in Phang Nga province (n=322) and nondisplaced persons in the provinces of Krabi and Phuket (n=368). Data were collected using an interviewer-administered questionnaire on handheld computers. A surveillance follow-up survey of the displaced persons (n=371) and nondisplaced persons (n=322) in Phang Na was conducted in September 2005. Main Outcomes Measures Medical Outcomes Study-36 Short-Form Health Survey SF-36 to assess self-perceived general health, bodily pain, and social and emotional functioning; the Harvard Trauma Questionnaire to assess tsunami-specific traumatic events; and the Hopkins Checklist-25 to detect symptoms of anxiety and depression. Results Participation rates for displaced and nondisplaced persons in the rapid assessment survey were 69% and 58%, respectively. Symptoms of PTSD were reported by 12% of displaced and 7% of nondisplaced persons in Phang Nga and 3% of nondisplaced persons in Krabi and Phuket. Anxiety symptoms were reported by 37% of displaced and 30% of nondisplaced persons in Phang Nga and 22% of nondisplaced persons in Krabi and Phuket. Symptoms of depression were reported by 30% of displaced and 21% of nondisplaced persons in Phang Nga and 10% of nondisplaced persons in Krabi and Phuket. In multivariate analysis, loss of livelihood was independently and significantly associated with symptoms of all 3 mental health outcomes (PTSD, anxiety, and depression). In the 9-month follow-up surveillance survey of 270 (73%) displaced and 250 (80%) nondisplaced participants in Phang Nga, prevalence rates of symptoms of PTSD, anxiety, and depression among displaced persons decreased to 7%, 24.8%, and 16.7%, respectively, and among nondisplaced persons, prevalence rates decreased to 2.3%, 25.9%, and 14.3%, respectively. Conclusions Among survivors of the tsunami in southern Thailand, elevated rates of symptoms of PTSD, anxiety, and depression were reported 8 weeks after the disaster, with higher rates for anxiety and depression than PTSD symptoms. Nine months after

the disaster, the rates of those reporting these symptoms decreased but were still elevated. This information is important for directing, strengthening, and evaluating posttsunami mental health needs and interventions.

van Minnen, A., & Foa, E. B. (2006). The effect of imaginal exposure length on outcome of treatment for PTSD. *Journal of Traumatic Stress, 19* (4), 427-438.

The effects of prolonged imaginal exposure sessions (60 minutes; n = 60) were compared with those of shorter exposure sessions (30 minutes, n = 32) for patients with chronic posttraumatic stress disorder (PTSD). Consistent with the authors' hypothesis, patients who received 30-minute imaginal exposure sessions showed less within-session habituation than patients who received 60-minute exposure sessions. However no differences between patients who received 60-minute and 30-minute exposure sessions emerged on improvement in PTSD-symptoms, state anxiety, depression, and end-state functioning, both at posttreatment and at 1-month follow-up. No group differences were found with regard to between sessions habituation, number of sessions, and dropout rate. Results suggest that 30-minute imaginal exposure sessions are as effective as 60-minute exposure sessions and that within-session habituation may not be a necessary condition for successful treatment of PTSD. Future research is needed to replicate these findings and extend them to other clinical populations.

Zoellner, T., & Maercker, A. (2006). Posttraumatic growth in clinical psychology - A critical review and introduction of a two component model. *Clinical Psychology Review, 26* (5), 626-653.

Positive psychological or personal changes in the aftermath of trauma, defined as the result of the struggle with highly stressful events, have recently elicited heightened attention by trauma researchers. This article aims at summarizing the most important theoretical models and conceptualizations of posttraumatic growth (PTG) and addresses the issue of the adaptive significance of this phenomenon. It further renders a thorough empirical review of the relationship between PTG and psychological adjustment. European findings are specifically incorporated. As a conclusion, a two component cognitive model of PTG will be proposed that may explain the contradicting empirical findings in regard to the relationship between mental health and PTG. The Janus-Face model of PTG [Maercker, A. and Zoellner, T. (2004). The Janus face of self-perceived growth: Toward a two-component model of posttraumatic growth. *Psychological Inquiry, 15*, 41-48.] incorporates a constructive and an illusory aspect. On this basis, findings regarding relevant cognitive factors as predictors of PTG are summarized and evaluated. The article ends with a discussion of fruitful future research directions and how PTG can add a new perspective into trauma therapy. (c) 2006 Elsevier Ltd. All rights reserved.