REFERENCE SHEET & MORE

EXCERPTS & ABSTRACTS FROM ACE STUDIES + REPORTING

Adverse childhood experiences (ACEs) represent a childâ€™s exposure to negative events, including emotional, physical and sexual abuse, domestic violence, absence of a parent because of divorce or separation, and a family/household memberâ€™s mental illness, incarceration, and/or substance abuse [1], [2]. Research has shown that majority of adults have experienced at least one ACE, [3] with prevalence estimates ranging from 65% to 87% [4], [5]. The Centers for Disease Control and Prevention (CDC) has found that 59.4% of Behavioral Risk Factor Surveillance System (BRFSS) respondents in 2009 reported having at least one ACE, approximately 25% of adults reported experiencing â‰¥3 ACEs and 8.7% reported â‰¥5 ACEs [2]. These high prevalence estimates highlight the importance for additional efforts, locally, state-wide, and nationally, to help in the reduction and prevention of child maltreatment, and associated family dysfunction. There is also a need for services to treat outcomes, especially stress-related health illnesses, associated with ACEs [2], from childhood through adulthood.

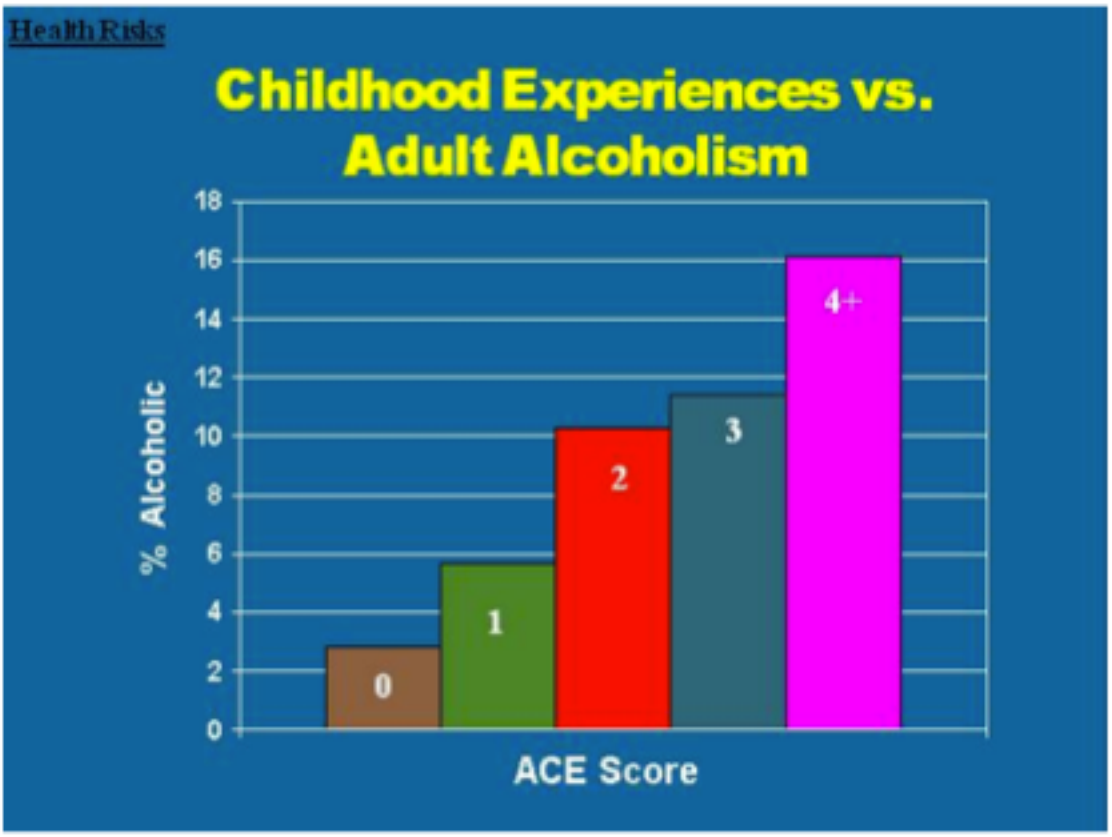
Research has shown that ACEs are linked to multiple adverse health outcomes, and are interrelated rather than occurring independently [6]. ACEs have been linked to substance abuse [7]â€“[11], depression [7],[8],[12],[13], cardiovascular disease [7],[14], diabetes [7], cancer [7],[15],[16], risky sexual behaviors ,[17â€“19], sexually transmitted infections [7],[8],[19] suicidality [7],[8],[13],[17],[18], and premature mortality in adulthood [17].

Brown MJ, Thacker LR, Cohen SA. Association between Adverse Childhood Experiences and Diagnosis of Cancer. Vinciguerra M, ed. *PLoS ONE*. 2013;8(6):e65524. doi:10.1371/journal.pone.0065524.

Corrigan, FM and Hull, AM. Recognition of the neurobiological insults imposed by complex trauma and the implications for psychotherapeutic interventions. BJPsych Bull Apr 2015, 39 (2) 79-86;

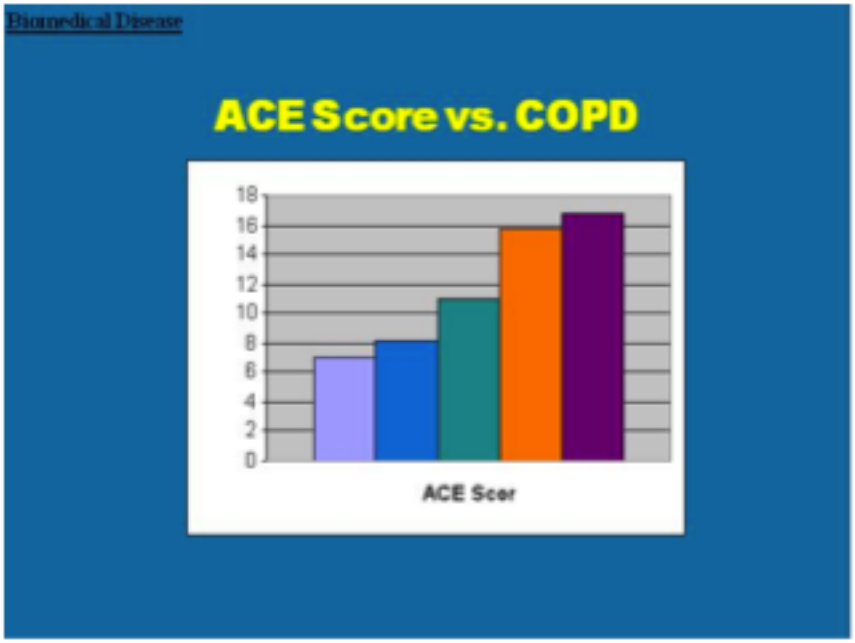
The Adverse Childhood Experiences Study — the largest, most important public health study you never heard of — began in an obesity clinic, October 3, 21012, by Jane Ellen Stevens

Things start getting serious around an ACE score of 4. Compared with people with zero ACEs, those with four categories of ACEs had a 240 percent greater risk of hepatitis, were 390 percent more likely to have chronic obstructive pulmonary disease (emphysema or chronic bronchitis), and a 240 percent higher risk of a sexually-transmitted disease.

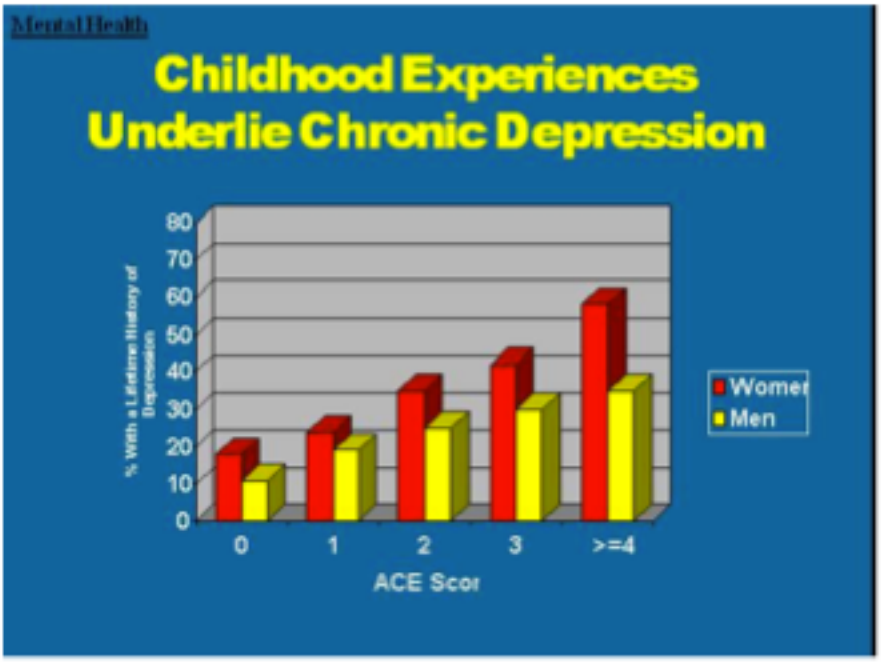


They were twice as likely to be smokers, 12 times more likely to have attempted suicide, seven times more likely to be alcoholic, and 10 times more likely to have injected street drugs.

People with high ACE scores are more likely to be violent, to have more marriages, more broken bones, more drug prescriptions, more depression, more auto-immune diseases, and more work absences.



"Some of the increases are enormous and are of a size that you rarely ever see in health studies or epidemiological studies. It changed my thinking dramatically," says Anda.



Two in nine people had an ACE score of 3 or more, and one in eight had an ACE score of 4 or more. This means that every physician probably sees several high ACE score patients every day, notes Felitti. "Typically, they are the most difficult, though the underpinnings will rarely be recognized."

The kicker was this: The ACE Study participants were average Americans. Seventy-five percent were white, 11 percent Latino, 7.5 percent Asian and Pacific Islander, and 5 percent were black. They were middle-class, middle-aged, 36 percent had attended college and 40 percent had college degrees or higher. Since they were members of Kaiser Permanente, they all had jobs and great health care. Their average age was 57.

Site: https://acestoohigh.com/2012/10/03/the-adverse-childhood-experiences-study-the-largest-most-important-public-health-study-you-never-heard-of-began-in-an-obesity-clinic/

Autoimmune Disease

Sixty-four percent reported at least one ACE. The event rate (per 10,000 person-years) for a first hospitalization with any autoimmune disease was 31.4 in women and 34.4 in men. First hospitalizations for any autoimmune disease increased with increasing number of ACEs ($p < .05$). Compared with persons with no ACEs, **persons with ≥2 ACEs were at a 70% increased risk for hospitalizations with Th1, 80% increased risk for Th2, and 100% increased risk for rheumatic diseases ($p < .05$)**.

Dube SR, Fairweather D, Pearson WS, Felitti VJ, Anda RF, Croft JB. Cumulative Childhood Stress and Autoimmune Diseases in Adults. *Psychosomatic Medicine*. 2009;71(2):243-250. doi:10.1097/PSY.0b013e3181907888.

Lung Cancer

The ACE score showed a graded relationship to smoking behaviors. We identified 64 cases of lung cancer through hospital discharge records (age-standardized risk = 201 x 100,000(-1) population) and 111 cases of lung cancer through mortality records (age-standardized mortality rate = 31.1 x 100,000(-1) person-years). The ACE score also showed a graded relationship to the incidence of lung cancer for cases identified through hospital discharge (P = 0.0004), mortality (P = 0.025), and both methods combined (P = 0.001). **Compared to persons without ACEs, the risk of lung cancer for those with >or= 6 ACEs was increased approximately 3-fold** (hospital records: RR = 3.18, 95%CI = 0.71-14.15; mortality records: RR = 3.55, 95%CI = 1.25-10.09; hospital or mortality records: RR = 2.70, 95%CI = 0.94-7.72). After a priori consideration of a causal pathway (i.e., ACEs --> smoking --> lung cancer), risk ratios were attenuated toward the null, although not completely. **For lung cancer identified through hospital or mortality**

records, persons with >or= 6 ACEs were roughly 13 years younger on average at presentation than those without ACEs.

CONCLUSIONS:
Adverse childhood experiences may be associated with an increased risk of lung cancer, particularly premature death from lung cancer. The increase in risk may only be partly explained by smoking suggesting other possible mechanisms by which ACEs may contribute to the occurrence of lung cancer.

Brown DW, Anda RF, Felitti VJ, Edwards VJ, Malarcher AM, Croft JB, Giles WH. Adverse childhood experiences and the risk of lung cancer. BMC Public Health. 2010;10:20.

COPD

The ACE Score had a graded relationship to each of three measures of the occurrence of COPD. Compared to people with an ACE Score of 0, those with an ACE Score of > or =5 had 2.6 times the risk of prevalent COPD, 2.0 times the risk of incident hospitalizations, and 1.6 times the rates of prescriptions ($p<0.01$ for all comparisons). These associations were only modestly reduced by adjustment for smoking. The mean age at hospitalization decreased as the ACE Score increased ($p<0.01$).

Anda RF, Brown DW, Dube SR, Bremner JD, Felitti VJ, Giles WH. Adverse childhood experiences and chronic obstructive pulmonary disease in adults. Am J Prev Med. 2008;34(5):396-403.

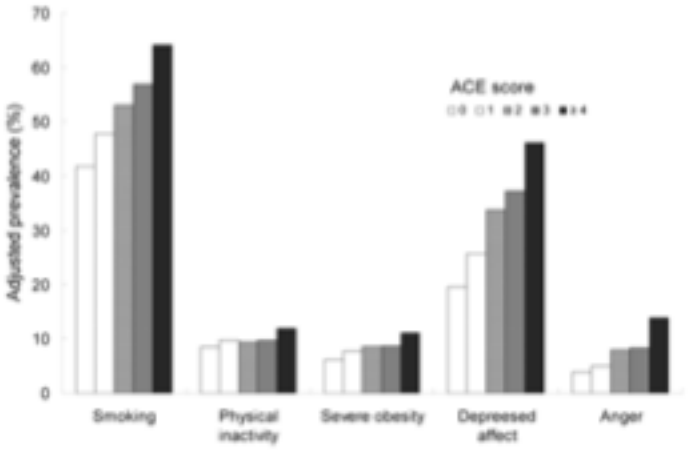
Some 63.8% of women and 62.2% of men reported ≥1 ACE. COPD was reported by 4.9% of women and 4.0% of men. **In women, but not in men, there was a higher likelihood of COPD associated with verbal abuse** (PR =1.30, 95% CI: 1.05, 1.61), **sexual abuse** (PR =1.69, 95% CI: 1.36, 2.10), **living with a substance abusing household member** (PR =1.49, 95% CI: 1.23, 1.81), **witnessing domestic violence** (PR =1.40, 95% CI: 1.14, 1.72), **and parental separation/divorce** (PR =1.47, 95% CI: 1.21, 1.80) during childhood **compared to those with no individual ACEs. Reporting ≥5 ACEs** (PR =2.08, 95% CI: 1.55, 2.80) **compared to none was associated with a higher likelihood of COPD among women only.**

Cunningham TJ, Ford ES, Croft JB, Merrick MT, Rolle IV, Giles WH. Sex-specific relationships between adverse childhood experiences and chronic obstructive pulmonary disease in five states. 2014;9:1033-42.

Ischemic Heart Disease

Nine of 10 categories of ACEs significantly increased the risk of IHD by 1.3- to 1.7-fold versus persons with no ACEs. The adjusted odds ratios for IHD among persons with ≥7 ACEs was 3.6 (95% CI, 2.4 to 5.3). The ACE–IHD relation was mediated more strongly by individual psychological risk factors commonly associated with ACEs than by traditional IHD risk factors. We observed significant association between increased likelihood of reported IHD (adjusted ORs) and depressed affect (2.1, 1.9 to 2.4) and anger (2.5, 2.1 to 3.0) as well as traditional risk factors (smoking, physical inactivity, obesity, diabetes and hypertension), with ORs ranging from 1.2 to 2.7.

The **Figure** depicts a graded association of the ACE scores with psychological and some traditional risk factors for IHD. **Notably, the adjusted prevalence of depressed affect and anger was increased 2- to 3-fold among persons with ≥4 ACEs than among those with 0 ACEs. This was similar for diabetes and hypertension, though the trend of association was less obvious (data not shown).**



Persons with ≥7 ACEs were >3 times as likely as persons with no ACEs to report a IHD. . . . for every increase in the ACE score the likelihood of reporting IHD increased by 20% (P<0.001). After controlling for traditional and psychological risk factors (model IV), it was reduced to 10%.

Dong M, Giles WH, Felitti VJ, Dube, SR, Williams JE, Chapman DP, Anda RF. Insights into causal pathways for ischemic heart disease: adverse childhood experiences study. Circulation. 2004;110:1761–1766.

Liver Disease

Retrospective cohort study data were collected from 17 337 adult health plan members through a survey. Logistic regression adjusted for age, sex, race, and education was used to estimate the strength of the ACEs-liver disease relationship and the impact of the mediators in this relationship.

RESULTS:
Each of 10 ACEs increased the risk of liver disease 1.2 to 1.6 times (P<.001). The number of ACEs (ACE score) had a graded relationship to liver disease (P<.001). **Compared with persons with no ACEs, the adjusted odds ratio of ever having liver disease among persons with 6 or more ACEs was 2.6** (P<.001). The ACE score also had a strong graded relationship to risk behaviors for liver disease. The strength of the ACEs-liver disease association was reduced 38% to 50% by adjustment for these risk behaviors, suggesting they are mediators of this relationship.

CONCLUSIONS:
The ACE score showed a graded relationship to the risk of liver disease that appears to be mediated substantially by behaviors that increase the risk of viral and alcohol-induced liver disease. Understanding the effect of ACEs on the risk of liver disease and development of these behaviors provides insight into causal pathways, which may prove useful in the prevention of liver disease.

Dong M, Anda RF, Dube SR, Felitti VJ, Giles WH. Adverse childhood experiences and self-reported liver disease: new insights into a causal pathway. Arch Intern Med. 2003;163:1949–1956.

STD's

A total of 9323 (4263 men and 5060 women) adults >/=18 years of age participated in a retrospective cohort study evaluating the association between ACEs and self-reported STDs. Participants were adult members of a managed care organization who underwent routine medical evaluations and completed standardized questionnaires about 7 categories of ACEs, including emotional, physical, or sexual abuse; living with a battered mother; and living with a substance-abusing, mentally ill, or criminal household member. Logistic regression was used to model the association between the cumulative categories of ACEs (range: 0-7) and a history of STDs.

RESULTS:
We found that 59% (2986) of women and 57% (2464) of men reported 1 or more categories of adverse experiences during childhood. **Among those with 0, 1, 2, 3, 4 to 5, and 6 to 7 ACEs, the proportion with STDs was 4.1%, 6.9%, 8.0%, 11.6%, 13.5%, and 20.7% for women and 7.3%, 10.9%, 12.9%, 17.1%, 17.1%, and 39.1% for men.** After adjustment for age and race, all odds ratios for reporting an STD had confidence intervals that excluded 1. Among those with 1, 2, 3, 4 to 5, and 6 to 7 ACEs, the odds ratios were 1.45, 1.54, 2.22, 2. 48, and 3.40 for women and 1.46, 1.67, 2.16, 2.07, and 5.3 for men.

CONCLUSIONS:
We observed a strong graded relationship between ACEs and a self-reported history of STDs among adults.

. . . .

We found that the absolute risk of STD was higher for men than for women for every subgroup considered (Table 2). For women, each category of ACE was significantly and independently associated with an increased risk of reporting an STD. Compared with women who denied having experienced the specific category of either abuse or household dysfunction, **we observed the following increases in STD after adjustment for race and age at interview: 100% for those who, as children, had incarcerated family members, 90% for those who experienced childhood sexual abuse, 70% for those reporting childhood emotional abuse, 60% for those reporting physical abuse, 50% for those reporting household substance abuse, 50% for those who lived with a mentally ill family member during childhood, and 40% for those who lived with a battered mother. For men, the increased risk of STD for those experiencing childhood abuse of household dysfunction was 160% for those**

Mechanism by Which Adverse Childhood Experiences Influence Health and Well-being Throughout the Lifespan

with an incarcerated family member, 90% for those who had been sexually abused, 50% for those who lived with a battered mother, 50% for those who lived with a substance abuser, 40% for those who had been physically abused, 40% for those who had been emotionally abused, and 20% for those who had a mentally ill family member. Each of these categories was statistically significant for both men and women before adjustment using a logistic model (data not shown), and all except the latter (men having a mentally ill household member) remained significant after adjustment. Because the adjusted and unadjusted estimates were quite similar for those living with a mentally ill household member, it is likely that the loss of significance after adjustment is explained by the loss of precision attributable to small samples in some cells.

Furthermore, for both women and men, we found that the prevalence of reporting an STD increased as the number of categories of exposure to adverse experiences during childhood increased (**Table 3**). **For men, the prevalence of STDs ranged from 7.3% for those reporting no categories of ACE, to 39.1% for those reporting 6 to 7 categories of ACEs. For women, the prevalence of ACEs ranged from 4.1% for those reporting no categories of ACEs to 20.7% for those reporting 6 to 7 categories of ACEs.**

Hillis SD, Anda RF, Felitti VJ, Nordenberg D, Marchbanks PA. Adverse childhood experiences and sexually transmitted diseases in men and women: a retrospective study. Pediatrics. 2000;106(1):E11.

Smoking

Some 59.4% of men and women reported at least one adverse childhood experience. Each of the eight adverse childhood experiences measures was significantly associated with smoking status after adjustment for demographic variables. The prevalence ratios for current and ever smoking increased in a positive graded fashion as the adverse childhood experience score increased. Among adults who reported no adverse childhood experiences, 13.0% were currently smoking and 38.3% had ever smoked. **Compared to participants with an adverse childhood experience score of 0, those with an adverse childhood experience score of 5 or more were more likely to be a current smoker (adjusted prevalence ratio (aPR): 2.22, 95% confidence interval [CI]: 1.92-2.57) and to have ever smoked (aPR: 1.80, 95% CI: 1.67-1.93).** Further research is warranted to determine whether the prevention of and interventions for adverse childhood experiences might reduce the burden of smoking-related illness in the general population.

Ford ES, Anda RF, Edwards VJ, Perry GS, Zhao G, Tsai J, Li C, Croft JB. Adverse childhood experiences and smoking status in five states. Prev Med. 2011;53:188-93.

RESULTS:
At least 1 of 8 categories of adverse childhood experiences was reported by 63% of respondents. After adjusting for age, sex, race, and education, each category showed an increased risk for each smoking behavior, and these risks were comparable for each category of adverse childhood experiences. **Compared with those reporting no adverse childhood experiences, persons reporting 5 or more categories had substantially higher risks of early smoking initiation** (odds ratio [OR], 5.4; 95% confidence interval [CI], 4.1-7.1), **ever smoking** (OR, 3.1; 95% CI, 2.6-3.8), **current smoking** (OR, 2.1; 95% CI, 1.6-2.7), **and heavy smoking** (OR, 2.8; 95% CI, 1.9-4.2). Each relationship between smoking behavior and the number of adverse childhood experiences was strong and graded (P<.001). For any given number of adverse childhood experiences, recent problems with depressed affect were more common among smokers than among nonsmokers.

Anda RF, Croft JB, Felitti VJ, Nordenberg D, Giles WH, Williamson DF, Giovino GA *Adverse childhood experiences and smoking during adolescence and adulthood (1999)* JAMA. 1999 Nov 3;282(17):1652-8.

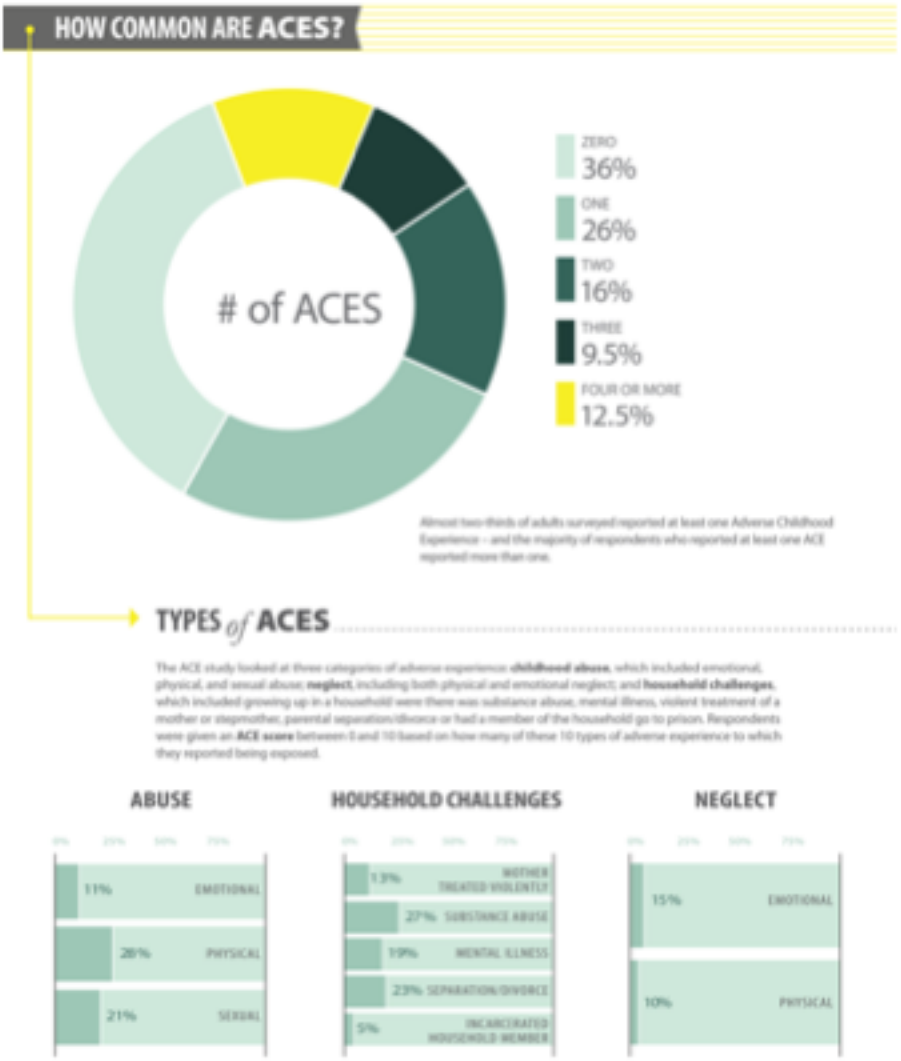
Illicit Drug Use

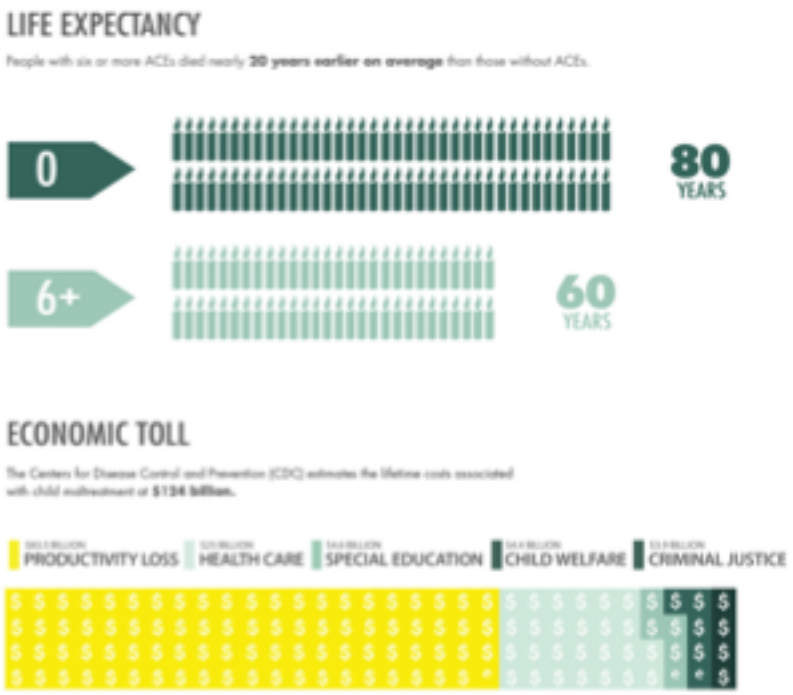
Each ACE increased the likelihood for early initiation 2- to 4-fold. The ACE score had a strong graded relationship to initiation of drug use in all 3 age categories as well as to drug use problems, drug addiction, and parenteral drug use. Compared with people with 0 ACEs, people with >or=5 ACEs were 7- to 10-fold more likely to report illicit drug use problems, addiction to illicit drugs, and parenteral drug use. The attributable risk fractions as a result of ACEs for each of these illicit drug use problems were 56%, 64%, and 67%, respectively. For each of the 4 birth cohorts examined, the ACE score also had a strong graded relationship to lifetime drug use.

Dube SR, Felitti VJ, Dong M, Chapman DP, Giles WH, Anda RF. Childhood abuse, neglect and household dysfunction and the risk of illicit drug use: The Adverse Childhood Experience Study. Pediatrics. 2003;111(3):564–572.

Infographics/Tables from the CDC's Site:
https://vetoviolence.cdc.gov/apps/phl/resource_center_infographic.html

The ACE Pyramid represents the conceptual framework for the ACE Study. The ACE Study has uncovered how ACEs are strongly related to development of risk factors for disease, and well-being throughout the life course.





Obesity

Some 66% of participants reported one or more type of abuse. Physical abuse and verbal abuse were most strongly associated with body weight and obesity. Compared with no physical abuse (55%), being 'often hit and injured' (2.5%) had a 4.0 kg (95% confidence interval: 2.4-5.6 kg) higher weight and a 1.4 (1.2-1.6) relative risk (RR) of body mass index (BMI) > or = 30. Compared with no verbal abuse (53%), being 'often verbally abused' (9.5%) had an RR of 1.9 (1.3-2.7) for BMI > or = 40. The abuse associations were not mutually independent, however, because the abuse types strongly co-occurred. Obesity risk increased with number and severity of each type of abuse. The population attributable fraction for 'any mention' of abuse (67%) was 8% (3.4-12.3%) for BMI > or = 30 and 17.3% (-1.0-32.4%) for BMI > or = 40.

Williamson DF, Thompson, TJ, Anda, RF, Dietz WH, Felitti VJ. Body weight, obesity, and self-reported abuse in childhood. International Journal of Obesity. 2002;26:1075–1082.

Premature Death

Strong, graded relationships between exposure to childhood traumatic stressors and numerous negative health behaviors and outcomes, healthcare utilization, and overall health status inspired the question of whether these adverse childhood experiences (ACEs) are associated with premature death during adulthood.

RESULTS:
Overall, 1539 people died during follow-up; the crude death rate was 91.0 per 1000; the age-adjusted rate was 54.7 per 1000. **People with six or more ACEs died nearly 20 years earlier on average than those without ACEs (60.6 years, 95% CI=56.2, 65.1, vs 79.1 years, 95% CI=78.4, 79.9).** Average YLL per death was nearly three times greater among people with six or more ACEs (25.2 years) than those without ACEs (9.2 years). Roughly one third (n=526) of those who died during follow-up were aged < or =75 years at the time of death, accounting for 4792 YPLL. After multivariable adjustment, adults with six or more ACEs were 1.7 (95% CI=1.06, 2.83) times more likely to die when aged < or =75 years and 2.4 (95% CI=1.30, 4.39) times more likely to die when aged < or =65 years.

CONCLUSIONS:
ACEs are associated with an increased risk of premature death, although a graded increase in the risk of premature death was not observed across the number of categories of ACEs. The increase in risk was only partly explained by documented ACE-related health and social problems, suggesting other possible mechanisms by which ACEs may contribute to premature death.

Dube SR, Felitti VJ, Dong M, Chapman DP, Giles WH, Anda RF, Childhood abuse, neglect, and household dysfunction and the risk of illicit drug use: the adverse childhood experiences study. Pediatrics. 2003 Mar; 111(3):564-72.

Depression

Lifetime prevalence of depressive disorders was 23%. **Childhood emotional abuse increased risk for lifetime depressive disorders, with adjusted odds ratios (ORs) of 2.7 [95% confidence interval (CI), 2.3-3.2] in women and 2.5 (95% CI, 1.9-3.2) in men. We found a strong, dose-response relationship between the ACE score and the probability of lifetime and recent depressive disorders** (P<0.0001). This relationship

was attenuated slightly when a history of growing up with a mentally ill household member was included in the model, but remained significant (P<0.001).

CONCLUSIONS:
The number of ACEs has a graded relationship to both lifetime and recent depressive disorders. These results suggest that exposure to ACEs is associated with increased risk of depressive disorders up to decades after their occurrence. Early recognition of childhood abuse and appropriate intervention may thus play an important role in the prevention of depressive disorders throughout the life span.

Chapman DP, Whitfield CL, Felitti VJ, Dube SR, Edwards VJ, Anda RF. Adverse childhood experiences and the risk of depressive disorders in adulthood. J Affect Disord. 2004 Oct 15; 82(2):217-25.

Interoceptive Awareness/Somatic Mindfulness

Abstract
Interoception can be broadly defined as the sense of signals originating within the body. As such, interoception is critical for our sense of embodiment, motivation, and well-being. And yet, despite its importance, interoception remains poorly understood within modern science. This paper reviews interdisciplinary perspectives on interoception, with the goal of presenting a unified perspective from diverse fields such as neuroscience, clinical practice, and contemplative studies. It is hoped that this integrative effort will advance our understanding of how interoception determines well-being, and identify the central challenges to such understanding. To this end, we introduce an expanded taxonomy of interoceptive processes, arguing that many of these processes can be understood through an emerging predictive coding model for mind–body integration. The model, which describes the tension between expected and felt body sensation, parallels contemplative theories, and implicates interoception in a variety of affective and psychosomatic disorders. We conclude that maladaptive construal of bodily sensations may lie at the heart of many contemporary maladies, and that contemplative practices may attenuate these interpretative biases, restoring a person's sense of presence and agency in the world.

Farb N, Daubenmier J, Price CJ, et al. Interoception, contemplative practice, and health. *Frontiers in Psychology*. 2015;6:763.

Craig, A. D. "Interoception and emotion: a neuroanatomical perspective." *Handbook of emotions* 3.602 (2008): 272-88.

Craig, Arthur D. "Opinion: How do you feel? Interoception: the sense of the physiological condition of the body." *Nature reviews. Neuroscience* 3.8 (2002): 655.

Neuroception

"The detection of safety subdues the adaptive defense systems dependent on limbic striations [in the brain]. Thus, providing a plausible model of how neural detection of environmental risk (i.e. neuroception) would modulate behavior and physiological state to support adaptive behaviors in response to safe, dangerous, and life-threatening behaviors. Conceptually, the process of detecting safety is inclusive of the detection of risk."

Porges, Stephen W. "Social engagement and attachment." *Annals of the New York Academy of Sciences* 1008.1 (2003): 31-47, p. 41.

"The braking mechanism of the social engagement system can "rapidly decrease or increase heart, allowing us to slow down and then remobilize, while inhibiting primitive defensive reactions. This system fosters more more tranquil, flexibly adaptive overall states and thereby helps arousal to remain within the window of tolerance."

Ogden, Pat, Kekuni Minton, and Clare Pain. Trauma and the Body: A Sensorimotor Approach to Psychotherapy. New York: W.W. Norton, 2006. Print. p. 30, with citation to Porges, SW. *Neuroception: A Subconscious System for Detecting Threats and Safety* (2004) Zero to Three (J), v24 n5 p19-24; and Porges, S.W. (2005) The role of social engagement in attachment and bonding: A phylogenetic perspective.

Breath Regulation Practices

Gerbarg, PL & Brown, RP. Neurobiology and Neurophysiology of Breath Practices in Psychiatric Care, November 30, 2016 | Special Reports, Neuropsychiatry (www.psychiatrictimes.com)

Brown RP, Gerbarg PL. *The Healing Power of the Breath. Simple Techniques to Reduce Stress and Anxiety, Enhance Concentration, and Balance Your Emotions*. Boston, MA: Shambhala; 2012.

Descilo, Teresa, et al. "Effects of a yoga breath intervention alone and in combination with an exposure therapy for post−traumatic stress disorder and depression in survivors of the 2004 South−East Asia tsunami." *Acta Psychiatrica Scandinavica* 121.4 (2010): 289-300.

Trauma-Centered Trauma Sensitive Yoga/Somatic Mindfulness

van der Kolk, Bessel A., et al. "Original research yoga as an adjunctive treatment for 16 1616posttraumatic stress disorder: A randomized controlled trial." *J Clin Psychiatry* 75.6 (2014): e559-e565.

Price, Maggi, et al. "Effectiveness of an Extended Yoga Treatment for Women with Chronic Posttraumatic Stress Disorder." *The Journal of Alternative and Complementary Medicine* 23.4 (2017): 300-309.

See *http://www.traumacenter.org/clients/yoga_articles.php* for additional citations and resources

Nadine Burke Harris, MD, MPH, FAAP + Center for Youth Wellness

TED Talk: How Childhood Trauma Affects Health Across a Lifetime
https://www.ted.com/talks/
nadine_burke_harris_how_childhood_trauma_affects_health_across_a_lifetime

http://www.centerforyouthwellness.org/healthcare-professionals/how-we-screen-for-aces/
WHY AND HOW WE SCREEN FOR ACES

At the Center for Youth Wellness, we believe that early identification of children exposed to adverse childhood experiences (ACEs) provides an opportunity to treat and support families to help mitigate the effects on children and reduce their long-term risk of poor health and mental health outcomes.
In concert with our clinical pediatric partner, the Bayview Child Health Center, we have developed a protocol we use to screen our pediatric clients for exposure to ACEs and provide follow-up services and referrals to them and their families. In January, the Zero to Three Journal

published an article from members of our clinical and research teams describing that protocol. The following is a brief summary:

Adverse Childhood Experiences and their link to health outcomes were first described in a pathbreaking article published by Vincent Felitti and colleagues in 1998. The ACEs study looked at the association between self-reported adverse experiences (abuse, neglect, exposure to violence, etc.) and current health status. It found that the more such experiences a child had, the greater their chances of having health problems such as heart disease, diabetes, COPD or cancer during their adult years.

Research has shown that early adversity and trauma can trigger a physiological and behavioral stress response that can be so intense, frequent or sustained that it has a dysregulating effect on the body's neuro-endocrine-immune (NEI) system and can keep the body in a sustained state of "fight or flight" activation. This extreme and unhealthy stress response has been dubbed "toxic stress." Research has shown toxic stress responses in children can damage their nervous, endocrine, cardiovascular, reproductive, immune and other systems.

We have developed, and are now validating, three screening instruments (for parents of children, parents of teenagers and teens themselves) that seek to identify young people who have been exposed to ACEs. We present the appropriate version of this questionnaire, the ACE-Q, to either a parent/ caregiver or teenager when they check in for a routine appointment, starting at the age of 9 months.

A trained medical assistant presents the ACE-Q as part of a packet of routine assessments and describes its purpose, explaining that the information is gathered from all patients to help keep them healthy. The caregiver or teenager completes the ACE-Q in the waiting room, indicating whether they had been exposed to a list of 17 (or, for teens, 19) adverse experiences. The results are tallied and form a number that indicates how many kinds of adversity a child has experienced.

In the ensuing medical visit, the primary care physician reviews the ACE-Q with the child and/ or parent/caregiver, explains the impact of normal and toxic stress on health and development and asks whether the child is experiencing any symptoms that may be related to toxic stress. If a child's ACE-Q score is 0, or 1 to 3 with no related symptoms, the clinician will provide anticipatory guidance, explaining the concepts of ACEs and toxic stress, strategies for avoiding exposure to ACEs, managing stress and forging consistent, supportive relationships. If the ACE-Q score is 1 to 3 with symptoms, or 4 or higher with or without symptoms, the clinician will recommend integrated care.

If a child is referred for integrated care, a multidisciplinary clinical team will provide support to the patient and family. Care coordinators will educate the family about the impact of ACEs, interact with other providers and collaborate with other members of the CYW clinical team, arranging for home visits, psychotherapy, psychiatry, wellness nursing, biofeedback and other services from CYW or external providers.

If you are a health care professional interested in using the CYW ACE-Q, click here.