## **Supplementary Online Content**

Copeland WE, Shanahan L, Hinesley J, et al. Association of childhood trauma exposure with adult psychiatric disorders and functional outcomes. *JAMA Netw Open*. 2018;1(7):e184493. doi:10.1001/jamanetworkopen.2018.4493

**eFigure.** Ascertainment of the Original Great Smoky Mountains Study Sample

eTable 1. Childhood Traumatic Events and Frequencies

eAppendix. Childhood Covariates and Adult Functional Outcomes

**eTable 2.** Unadjusted Associations Between Specific Childhood Trauma Groups and Childhood Psychiatric Problems and Other Adversities/Hardships.

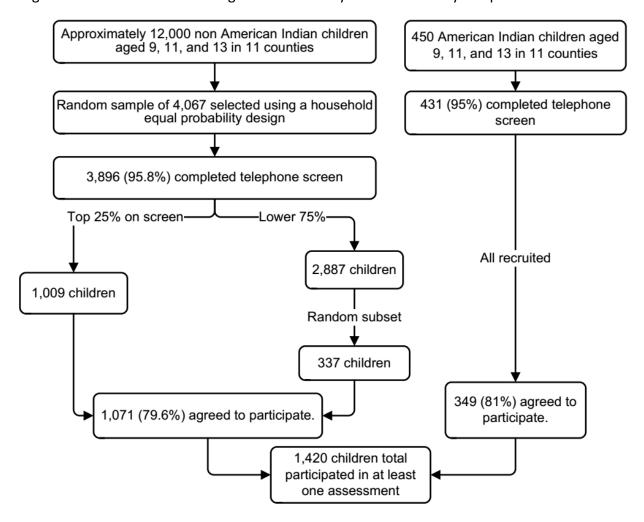
**eTable 3.** Unadjusted Associations Between Specific Cumulative Trauma Groups and Adult Psychiatric Groups and Functional Outcomes

**eTable 4.** Associations Between Specific Cumulative Trauma Groups and Adult Psychiatric Groups and Functional Outcomes Adjusted for Childhood Psychiatric Problems and Adversities/Hardships

**eTable 5.** Follow-up Analyses Adjusted for Comorbid Maltreatment and Adult Trauma Exposure

This supplementary material has been provided by the authors to give readers additional information about their work.

eFigure. Ascertainment of the original Great Smoky Mountains study sample



eTable 1. Childhood traumatic events and frequencies						
	%					
Violence	24.7					
Violent Death of loved one	2.4					
Violent Death of sib/peer	14.5					
War, terrorism	0.1					
Cause of death or severe harm	.6					
Victim of physical violence	3.1					
Physical abuse by relative	7.2					
Captivity	.9					
Sexual trauma	11.0					
Sexual abuse	10.9					
Rape	1.2					
Coercion	4.3					
Other Injury or Trauma	32.8					
Diagnosis of	11.0					
Physical illness						
Serious accident	11.6					
Natural disaster	11.1					
Fire	5.9					
Exposure to noxious agent	3.3					
Witness to life event	23.7					
Learned about life event	21.4					
Any Trauma	67.8					
Number of Trauma						
1 event	30.8					
2 or more event	37.0					

All percentages are weighted.

## **eAppendix. Childhood covariates and adult functional outcomes**Definition for childhood covariates:

Four types of family adversities/hardships were assessed: low socioeconomic status (SES), unstable family structure, family dysfunction, and maltreatment. Low SES was positive if the child's family met 2 or more of the following conditions: below the US federal poverty line based upon family size and income, parental high school education only, or low parental occupational prestige<sup>35</sup>. Unstable family structure was positive if child's family met 2 or more of the following conditions: single parent structure, step-parent in household, divorce, parental separation, or change in parent structure. Family dysfunction was positive if child's family met 5 or more of the following conditions: inadequate parental supervision of child's free time, overinvolvement of the parent into the child's activities in an age-inappropriate manner, physical violence between parents, top 20% in terms of frequency of parental arguments, marital relationship characterized by absence of affection, apathy, or indifference, child is upset by or actively involved in arguments between parents, mother scores in elevated range on depression questionnaire, top 20% in terms of frequency of arguments between parent and child, and most parental activities are source of tension or worry for the child. Peer victimization was positive if child or parent reported that the child had been a regular target of bullying or harassment by peers. Codebooks for all items available at http://devepi.duhs.duke.edu/codebooks.html.

## Adult functional Outcomes:

Health. Participants reported being diagnosed with a serious illness or being in a serious accident at any point during young adulthood. Having a sexually transmitted disease was coded if the participant reported testing positive for herpes, genital warts, chlamydia, or HIV. At each assessment, weight and height measurements were used to derive body mass index. Obesity was defined by CDC definitions up to age 20 and greater than or equal to 30 kg/m² thereafter. Participants were assessed for a DSM-IV psychiatric diagnosis including the following: any DSM-IV anxiety disorder, any depressive disorder, and antisocial personality disorder. Regular smoking was defined as smoking > 1 cigarette per day for 3 months. A physical health problems survey adapted from Form HIS-1A (1998), US Department of Commerce for the U.S. Public Health Service was administered at all interviews. This assessed self-reported perceived poor health, high illness contagion risk, and slow illness recovery.

Risky/illegal behaviors. Official felony charges were harvested from NC administrative Offices of the Courts records. Self-report was used to assess recent *police contact*, often *lying* to others, *frequent physical fighting*, and *breaking into another home/business/property*. Frequent *drunkenness* was coded if subject reported drinking to excess at least once weekly for 3 months. Subjects reported recent use of *marijuana* or other *illegal substances*. Finally, subjects reported having one-time sexual encounters with strangers (*hooking up with strangers*).

Wealth: Financial/educational accomplishments. Being impoverished was coded based upon thresholds issued by the Census Bureau based on income and family size <sup>36</sup>. High school © 2018 Copeland WE et al. JAMA Network Open.

dropout and completion of any college education were coded based upon the subject's educational status at the last adult assessment. The following job problems were assessed at each assessment: being dismissed or fired from a job and quitting a job without financial preparations. Finally, other financial problems assessed included: failing to honor debts or financial obligations and being a poor manager of one's finances.

Social relationships. Marital, parenthood, and divorce status were determined through self-report at the last adult assessment. The quality of the participant's relationship with their parents, spouse/significant other, and friends was assessed at each assessment including arguments and violence. Variables were included to indicate any violence in a primary relationship, poor relationship with one's parents, no best friend or confidente, and problems making or keeping friends.

eTable 2.Unadjusted as problems and other ad			•	fic childhoo	od trau	ma groups	and chil	dhood psy	chiatric	
problems and other ad	Violent trauma				Other Trauma		Witness		Learned about	
							Trauma		Trauma	
	OR	CI	OR	CI	OR	CI	OR	CI	OR	CI
Psychiatric problems										
Any	2.2	1.5-3.4	2.2	1.3-3.8	1.2	0.8-1.8	2.4	1.6-3.7	2.4	1.6-3.7
Any anxiety dx.	1.9	1.1-3.2	1.5	0.8-2.7	1.6	0.9-2.7	2.3	1.4-4.0	1.9	1.1-3.4
Any depressive dx.	2.1	1.1-3.9	2.6	1.3-5.1	2.2	1.2-4.0	2.7	1.4-5.0	1.9	1.0-3.6
ADHD	2.6	1.1-5.7	1.6	0.7-3.5	0.8	0.4-1.6	0.8	0.4-1.5	2.3	1.0-5.3
ODD	2.2	1.3-3.5	3.2	1.7-6.1	1.0	0.6-1.7	2.6	1.6-4.3	1.7	1.0-2.8
CD	2.5	1.4-4.3	4.4	2.1-9.2	1.5	0.9-2.6	3.3	1.9-5.7	2.3	1.3-4.2
Substance	1.4	0.7-3.0	1.2	0.5-3.1	0.8	0.4-1.6	2.4	1.2-4.9	3.1	1.5-6.4
Adversities/Hard-										
ships										
Low family SES	1.7	1.1-2.5	2.6	1.5-4.5	0.9	0.6-1.4	2.0	1.3-3.0	1.8	1.2-2.8
Family instability	3.2	2.1-4.8	1.6	0.9-2.7	1.1	0.7-1.6	2.6	1.7-4.0	1.9	1.2-2.9
Family dysfunction	2.3	1.6-3.5	1.7	1.0-2.9	1.2	0.8-1.8	3.2	2.1-4.9	1.5	0.9-2.2
Peer victimization	1.7	1.1-2.6	2.8	1.6-4.9	1.2	0.8-1.9	2.3	1.5-3.5	1.2	0.7-1.8

All percentages are weighted and ns are unweighted. Cumulative trauma exposure is treated as a continuous variable. All models adjusted for sex and race/ethnicity. Bolded values are significant at p < 0.05. OR= odds ratio; CI = 95% confidence intervals; Dx=disorder.

eTable 3. Unadjusted a	ssociat	ions betwe	en spec	ific cumula	tive tra	iuma group	s and ac	dult psychia	atric gro	oups and
functional outcomes.			•					. ,	Ū	•
	Violent trauma		Sexual Trauma		Other Trauma		Witness Trauma		Learned about Trauma	
	OR	CI	OR	CI	OR	CI	OR	CI	OR	CI
Psychiatric problems										
Any disorder	1.1	0.7-1.6	1.2	0.7-2.2	1.5	1.0-2.1	1.8	1.2-2.7	1.3	0.8-2.0
Any anxiety dx.	1.5	0.9-2.5	1.8	0.9-3.4	1.3	0.8-2.2	1.8	1.1-3.0	1.0	0.5-1.7
Any depressive dx.	1.4	0.8-2.4	2.2	1.0-4.5	1.4	0.8-2.5	2.0	1.1-3.6	1.2	0.6-2.3
Any substance dx.	0.9	0.6-1.4	0.9	0.5-1.7	1.4	1.0-2.2	1.5	0.9-2.3	1.4	0.9-2.2
<b>Functional outcomes</b>										
Health	.38	.1560	.23	0956	.40	.1960	.21	.0142	.19	0242
Risky/criminal	.06	1426	11	3513	.26	.0845	.25	.0643	.19	0241
Financial	.44	.2365	.40	.1565	.13	0532	.38	.1858	.19	0241
Social	.36	.1457	.21	0749	.01	1720	.38	.1858	.09	1028

All percentages are weighted and ns are unweighted. Cumulative trauma exposure is treated as a continuous variable. All models adjusted for sex and race/ethnicity. Bolded values are significant at p < 0.05. OR= odds ratio; CI = 95% confidence intervals; Dx=disorder.

eTable 4. Associations between specific cumulative trauma groups and adult psychiatric groups and functional											
outcomes adjusted for childhood psychiatric problems and adversities/hardships.											
	Viole	nt trauma	Sexual Trauma		Other Trauma		Witness		Learned about		
							Tr	auma	Trauma		
	OR	CI	OR	CI	OR	CI	OR	CI	OR	CI	
Psychiatric problems											
Any disorder	1.1	0.7-1.6	1.2	0.7-2.2	1.5	1.0-2.1	1.8	1.2-2.7	1.3	0.8-2.0	
Any anxiety dx.	1.5	0.9-2.5	1.8	0.9-3.4	1.3	0.8-2.2	1.8	1.1-3.0	1.0	0.5-1.7	
Any depressive dx.	1.4	0.8-2.4	2.2	1.0-4.5	1.4	0.8-2.5	2.0	1.1-3.6	1.2	0.6-2.3	
Any substance dx.	0.9	0.6-1.4	0.9	0.5-1.7	1.4	1.0-2.2	1.5	0.9-2.3	1.5	0.9-2.3	

All percentages are weighted and ns are unweighted. Cumulative trauma exposure is treated as a continuous variable. All models adjusted for sex, race/ethnicity, psychiatric history (depression, anxiety, ADHD, conduct, oppositional defiant and substance disorders), and adversities (low SES, familial instability, family dysfunction, and peer victimization). Bolded values are significant at p < 0.05. OR= odds ratio; CI = 95% confidence intervals; Dx=disorder.

-.09-.56

-.32-.15

.08-.54

-.06-.46

.45

.31

.17

.05

.26-.65

.13-.51

-.01-.34

-.12-.22

.18

.24

.24

.27

-.02-.37

.05-.44

.04-.43

.08-.46

.21

.19

.14

.07

-.01-.42

.01-.40

-.07-.35

-.10-.24

**Functional outcomes** 

Risky/criminal

.39

.05

.34

.29

.18-.59

-.14-.24

.14-.54

.09-.49

.23

-.08

.31

.20

Health

Social

Financial

eTable 5. Follow-up analyses adjusted for comorbid maltreatment and adult trauma exposure									
		Any dx	•		Health		Financial/Educational		
	OR	CI	Р	MR	CI	р	MR	CI	р
Controlled for:									
Maltreatment	1.3	1.0-1.5	0.03	.27	.1837	<0.001	.16	.0724	0.002
Recent trauma	1.2	1.0-1.5	0.06	.21	.1429	<0.001	.14	.0721	<0.001

All models adjusted for sex, race/ethnicity, psychiatric history (depression, anxiety, ADHD, conduct, oppositional defiant and substance disorders), and adversities (low SES, familial instability, family dysfunction, and peer victimization). Bolded values are significant at p <0.05.