



CHILDREN'S
HOSPITAL OF RICHMOND AT **VCU**

**Psychosocial Late Effects
of Childhood Cancer.**

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Learning Objectives:

- The learner will be able to identify the most common psychosocial late effects from childhood cancer treatment.
- The learner will be able to describe the risk factors associated with psychosocial late effects of childhood cancer.
- The learner will be able to evaluate screening, intervention, and referral options for these late effects.

Background & Context:

Bitsko, Matthew J., Debra Cohen, Robyn Dillon, Jeanne Harvey, Kevin Krull, and James L. Klosky. "Psychosocial Late Effects in Pediatric Cancer Survivors: A Report From the Children's Oncology Group." *Pediatric blood & cancer* 63, no. 2 (2016): 337-343.

COG Long-Term Follow-Up Guidelines, Version 4.0 (December 2014)

- LTFU Survivor = ≥ 2 or more years from TX completion.
 - Specialties: Cardiology, Pulmonology, etc., Nursing, **Behavioral Science**.
 - Neurocognitive, Social / QOL, Sleep / Fatigue, Health Behaviors, **Psychosocial**.
 - Depression, Anxiety, Global Distress, Resilience and Positive Growth, Developmental Barriers to Normative Adjustment.

www-survivorshipguidelines.org

Why is this Important?

- Overall 5 year Event free Survival:
 - 1960 = < 30%
 - Current = > 80%
- Currently more than 363,000 survivors of CC in US.
- One of every 680 people aged 20-50 in the US is a CCS.

Armstrong, Gregory T., et al. "Aging and risk of severe, disabling, life-threatening, and fatal events in the childhood cancer survivor study." *Journal of Clinical Oncology* (2014): JCO-2013.

Question #1:

- Are Survivors of childhood cancer more likely than their peers to have psychosocial problems?

Yes or No?

Previous Findings:

- Childhood Cancer Survivorship Study (CCSS): Large and historical consortium study.
- Sibling controls
- Often compared:
 - Within specific DX (eg CNS, liquid, solid, etc.)
 - Age of DX
 - Time since DX or TX completion.

Zeltzer, Lonnie K., et al. "Psychological status in childhood cancer survivors: a report from the Childhood Cancer Survivor Study." *Journal of Clinical Oncology* 27.14 (2009): 2396-2404.



Risk Factors within this Population

- Female gender
- Adolescent or young adult age.
- Prior HX of mental health or learning problems.
- Low levels of social support.
- Parent HX of depression, anxiety, or PTSD.
- CNS Dx
 - Tx to CNS
- Bone Marrow or Stem Cell Transplant.

Question #2

- Are Survivors of childhood cancer more likely than their siblings to have Sx of Anxiety

Yes or No?

Question #3

- Are Survivors of childhood cancer more likely than their siblings to have Sx of PTSD/ PTSS?

Yes or No?

But Wait:

- The argument in the field:
- Focusing Illusion or “priming.”
- Time, Place, and Context of Assessment.

Phipps, Sean, et al. "Posttraumatic stress and psychological growth in children with cancer: has the traumatic impact of cancer been overestimated?." *Journal of Clinical Oncology* 32.7 (2014): 641-646.

Question #4

- Are Survivors of childhood cancer more likely than their siblings to have Sx of Depression?

Yes or No?



Important Recent Finding:

Suicidal Ideation:

- CCS report S/I ~2x more often than siblings
 - 7.8% vs. 4.6%; reported over past week.
- S/I unrelated to:
 - Age, age @ Dx, gender, cancer Tx, relapse, time since Dx.
- S/I associated with:
 - CNS Dx, depression, pain, pt report of poor health.
 - Pt report of poor health significantly associated with S/I even after controlling for Depression and CNS Dx.

Recklitis, Christopher J., et al. "Suicide ideation in adult survivors of childhood cancer: a report from the Childhood Cancer Survivor Study." *Journal of Clinical Oncology* 28.4 (2010): 655-661.

Points to Ponder

The Larger Context: Population comparisons.
Our next step.

Concern	Total	Female	Male	Total N
Sadness ¹	29.90%	39.1	20.8%	13,495
Seriously Considered Suicide ²	17%	22.4%	11.6%	13,491
Attempted Suicide ²	8%	10.6%	5.4%	11,982

¹ = Almost every day for 2 or more weeks in a row; during past 12 months.

² = One or more times over the past 12 months.

CDC, Youth Online: High School YRBS; 2013 Results

What this Means:

Within our current LTFU Clinic, we:

- Assess for psychosocial risks factors via medical chart and pt report.
- Assess for psychosocial Sx via written and clinical report.
- Depending on screener and clinical interview (MD, NP, and/or Ph.D.), we:
 - Refer in-house for psychosocial follow-up.
 - Refer in-house for educational / vocational follow-up.
 - Refer out to meet pt / family needs.



Points to Ponder

Those effected = very high cost.

CCS who are:

- Female
- Unmarried
- Unemployed
- Annual household income less than \$20,000
- Lower educational attainment
- Lack health insurance
- Have a major medical condition ***are at increased risk for developing and maintaining an anxiety disorder.***

- Is this in the right direction?

Langeveld, N., et al., *Posttraumatic stress symptoms in adult survivors of childhood cancer.* Pediatric blood & cancer, 2004. **42**(7): p. 604-610.

“Good Citizenship”

These are our hopes for your child:

- Have an educational plan for success and confidence.
- Have a strong social life with appropriate skills (age appropriate).
- Be a happy and healthy person in their “society.”
 - Therefore, free of chronic mental illness.
- Have a strong sense of self (“Identity”)
 - Who they are and who they want to be (bumper sticker).
- Have appropriate education and career goals & options.
- Be “employable” in a field or trade of their choosing.
 - Financially independent.
 - Many health care insurance options.
- Be able to VOTE (I had to put this in – timely!!)

“Good Citizenship”

“SES” risk-factors

What can you do? *What can we do?*

Can we change?:

- Female
- Unmarried
- Unemployed
- Annual household income less than \$20,000
- Lower educational attainment
- Lack health insurance
- Have a major medical condition

“Good Citizenship”

“Psychosocial” risk-factors

What can you do?

What can we do?

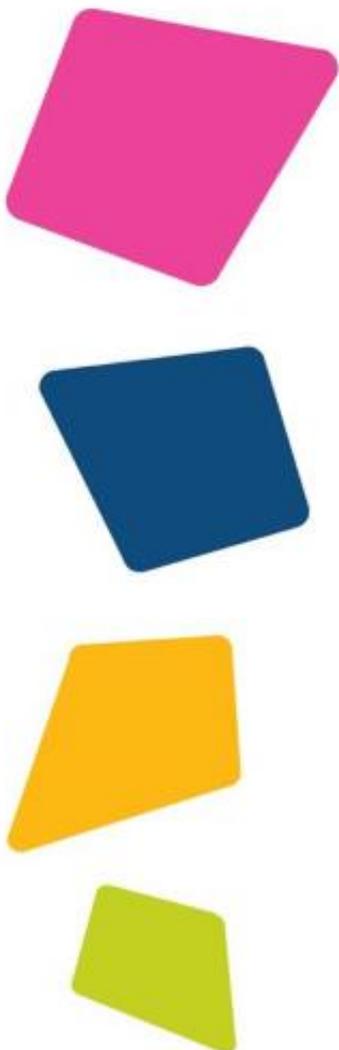
Can we change?:

- Adolescent or young adult age.
- Prior HX of mental health or learning problems.
- Low levels of social support.
- Parent HX of depression, anxiety, or PTSD.
- CNS Dx
 - Tx to CNS
- Bone Marrow or Stem Cell Transplant.

Emerging Research

Other outcomes to keep track of:

- Positive outcomes:
 - Resiliency, post-traumatic growth, benefit finding
- Access to Care
- Rx of SSRI's
 - Now followed in many registries outside the United States.
- Developmental Considerations:
 - Social functioning, coping strategies, emotional and identity development, formation of appropriate educational and vocational goals.



Questions and Comments?

AND, in what areas could we do a better job?

Many thanks.

Emerging Research

Brain tumor survivors:

Incidences of depression (19 %), anxiety (20 %), suicidal ideation (10.9 %), schizophrenia and its related psychoses (9.8 %), and behavioral problem (28.7 %) were higher among pediatric brain cancer survivors than in the normal population. Pediatric brain cancer survivors also exhibited significantly higher depressive scores when compared with survivors of any other cancer type. Additionally, survivors of pediatric brain tumors were more than 2.6 times likely to develop depression when compared with their sibling counterparts.

Shah SS, Dellarole A, Peterson EC, Bregy A, Komotar R, Harvey PD, Elhammady MS. Long-term psychiatric outcomes in pediatric brain tumor survivors. *Childs Nerv Syst.* 2015 May;31(5):653-63. doi: 10.1007/s00381-015-2669-7. Epub 2015 Mar 1. Review. PubMed PMID: 25726165.

Emerging Research

S/I:

Adult survivors of childhood cancer are at risk for late-report and recurrent suicide ideation, which is associated with increased risk of mortality. Routine screening for psychological distress in adult survivors appears warranted, especially for survivors who develop chronic physical health conditions.

Brinkman TM, Zhang N, Recklitis CJ, Kimberg C, Zeltzer LK, Muriel AC, Stovall M, Srivastava DK, Sklar CA, Robison LL, Krull KR. Suicide ideation and associated mortality in adult survivors of childhood cancer. *Cancer*. 2014 Jan 15;120(2):271-7. doi: 10.1002/cncr.28385.