

CHILDHOOD CANCER SURVIVOR STUDY
Analysis Concept Proposal
September 10, 2003

- 1. **STUDY TITLE:** Factors associated with compliance in providing biologic specimens: A report from the Childhood Cancer Survivor Study.
- 2. **WORKING GROUP AND INVESTIGATORS:** This proposed publication will be within the Epidemiology/Statistics working group. Proposed investigators will include:

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3. BACKGROUND AND RATIONALE

The collection of biologic specimens (buccal cells, peripheral blood, paraffin tissue blocks) from the CCSS study population has been a significant undertaking in recent years. This material will be useful for investigators to assess both genetic markers and environmental aspects of susceptibility to disease following treatment-related exposures. The need for a methodology paper describing the collection process and compliance of the biologic specimen portion of the CCSS is of great importance at this time for two main reasons: First, with the majority of specimens already collected, some investigators are in the process of analyzing data utilizing these specimens, and other concept proposals will no doubt be forthcoming. A publication describing our protocol becomes invaluable to serve as a citation in these future publications so authors do not need to dedicate excessive text in manuscripts to describe these procedures. Secondly, with the collection of three separate forms of biologic specimens, in addition the size of the potential specimen pool, the CCSS is in a position to share our experiences in specimen collection with other researchers contemplating similar endeavors. Comparisons between compliers and non-participants will be useful in determining feasibility as well as identifying potential biases in the individuals that choose to comply.

Several recent studies have described success in collecting DNA material from a "swish and spit" technique for buccal cell collection. This technique, also utilized by the CCSS, has allowed us to collect more than adequate amounts of genomic DNA from a large portion of survivors and sibling controls in a relatively inexpensive fashion. This paper will describe the protocol for sending and receiving the buccal cell kits. In addition, we will describe the demographic, disease, and lifestyle differences between those that returned a buccal cell sample, those that refused, and those that agreed to send a sample but never did (noncompliers). The success of this technique in terms of the amount of viable genomic DNA available for analysis will also be discussed.

For survivors who reported a second or subsequent malignancy, peripheral blood and paraffin tissue blocks were requested. Survivors were able to consent to allow us to collect either peripheral blood or paraffin blocks, or both. For patients reporting a second malignancy that subsequently died, we attempted to retrieve paraffin tissue blocks from the diagnosing institution of the second malignancy. This paper will describe the detailed procedure for the consent, collection, and processing of both the peripheral blood samples and paraffin blocks. Participants, refusals, and noncompliers will be described in terms of demographic, disease, and lifestyle differences. Furthermore, the success in establishing

lymphoblastoid cell lines from the peripheral blood, and the quality of the paraffin sections will be discussed as well.

4. TABLES AND FIGURES

Four main tables will be proposed for this paper. Each will describe the differences in pre-defined characteristics between participants, refusals, and noncompliers for the 3 separate biologic specimens, with buccal cells having a separate table for sibling controls. X^2 statistics will be used to test for significant differences between the groups. Additionally, figures may be used to show the quality and quantity of genetic material collected.

COMPARISON OF DEMOGRAPHIC CHARACTERISTICS BETWEEN *survivor* BUCCAL CELL PARTICIPANTS AND NON-PARTICIPANTS

Characteristic	Returned buccal sample*	refused buccal sample	non-compliers
Gender			
Male			
Female			
Cancer Type			
Leukemia			
CNS			
Hodgkin disease			
Non-hodgkin lymphoma			
Kidney			
Neuroblastoma			
Soft tissue sarcoma			
Bone cancer			
Age at diagnosis			
0-5			
6-10			
11-15			
16-20			
Race			
White, not hispanic			
Black, not hispanic			
Hispanic			
Asian/Pacific Islander			
Other			
Age at buccal request			
10-19			
20-29			
30-39			
40-49			
50+			
Highest education level			
< HS graduate			
HS graduate, no college			
Some college			
College graduate			
Post graduate			
Marital status			
never married			
married			
divorced/separated			
widowed			
Smoking status			
never			
current			
former			
Accessed health care in the			

last 2 years			
no			
yes			
General Health			
poor			
fair			
good			
excellent			
SMN status			
no subsequent malignancy			
breast			
thyroid			
CNS			
meningioma			
leukemia/lymphoma			
other			
Treatment for primary dx			
Radiation			
Yes			
No			
Chemotherapy			
Yes			
No			
Surgery			
Yes			
No			
Specific Chemotherapy			
Anthracyclines			
Yes			
No			
Alkylating Agents			
Yes			
No			
Epipodphyllotoxins			
Yes			
No			
Specific Radiation sites			
Brain			
Yes			
No			
Chest			
Yes			
No			
Gonads			
Yes			
No			

* survivor must have returned both consent form and buccal sample

COMPARISON OF DEMOGRAPHIC CHARACTERISTICS BETWEEN <i>sibling</i> BUCCAL CELL PARTICIPANTS AND NON-PARTICIPANTS			
Characteristic	Returned buccal sample*	refused buccal sample	non-compliers
Gender			
Male			
Female			
Race			
White, not hispanic			
Black, not hispanic			
Hispanic			
Asian/Pacific Islander			
Other			
Age at buccal request			
10-19			
20-29			
30-39			
40-49			
50+			
Highest education level			
< HS graduate			
HS graduate, no college			
Some college			
College graduate			
Post graduate			
Marital status			
never married			
married			
divorced/separated			
widowed			
Smoking status			
never			
current			
former			
Accessed health care in the last 2 years			
no			
yes			
General Health			
poor			
fair			
good			
excellent			

* sibling must have returned both consent form and buccal sample

COMPARISON OF DEMOGRAPHIC CHARACTERISTICS BETWEEN PERIPHERAL BLOOD PARTICIPANTS AND NON-PARTICIPANTS

Characteristic	Returned blood sample	refused blood sample	noncompliers
Gender			
Male			
Female			
Cancer Type			
Leukemia			
CNS			
Hodgkin disease			
Non-hodgkin lymphoma			
Kidney			
Neuroblastoma			
Soft tissue sarcoma			
Bone cancer			
Age at diagnosis			
0-5			
6-10			
11-15			
16-20			
Race			
White, not hispanic			
Black, not hispanic			
Hispanic			
Asian/Pacific Islander			
Other			
Age at blood request			
10-19			
20-29			
30-39			
40-49			
50+			
Highest education level			
< HS graduate			
HS graduate, no college			
Some college			
College graduate			
Post graduate			
Marital status			
never married			
married			
divorced/separated			
widowed			
Smoking status			
never			
current			
former			
Accessed health care in the			

last 2 years			
no			
yes			
General Health			
poor			
fair			
good			
excellent			
SMN status			
no subsequent malignancy			
breast			
thyroid			
CNS			
meningioma			
leukemia/lymphoma			
other			
Treatment for primary dx			
Radiation			
Yes			
No			
Chemotherapy			
Yes			
No			
Surgery			
Yes			
No			
Specific Chemotherapy			
Anthracyclines			
Yes			
No			
Alkylating Agents			
Yes			
No			
Epipodphyllotoxins			
Yes			
No			
Specific Radiation sites			
Brain			
Yes			
No			
Chest			
Yes			
No			
Gonads			
Yes			
No			

COMPARISON OF DEMOGRAPHIC CHARACTERISTICS BETWEEN PARAFFIN TISSUE PARTICIPANTS AND NON-PARTICIPANTS

Characteristic	received tissue specimen	refused tissue specimen	noncompliers
Gender			
Male			
Female			
Survival Status			
Alive			
Dead			
Cancer Type			
Leukemia			
CNS			
Hodgkin disease			
Non-hodgkin lymphoma			
Kidney			
Neuroblastoma			
Soft tissue sarcoma			
Bone cancer			
Age at diagnosis			
0-5			
6-10			
11-15			
16-20			
Race			
White, not hispanic			
Black, not hispanic			
Hispanic			
Asian/Pacific Islander			
Other			
Age at tissue request			
10-19			
20-29			
30-39			
40-49			
50+			
Highest education level			
< HS graduate			
HS graduate, no college			
Some college			
College graduate			
Post graduate			
Marital status			
never married			
married			
divorced/separated			
widowed			
Smoking status			
never			

current			
former			
Accessed health care in the last 2 years			
no			
yes			
General Health			
poor			
fair			
good			
excellent			
SMN status			
no subsequent malignancy			
breast			
thyroid			
CNS			
meningioma			
leukemia/lymphoma			
other			
Treatment for primary dx			
Radiation			
Yes			
No			
Chemotherapy			
Yes			
No			
Surgery			
Yes			
No			
Specific Chemotherapy			
Anthracyclines			
Yes			
No			
Alkylating Agents			
Yes			
No			
Epipodphyllotoxins			
Yes			
No			
Specific Radiation sites			
Brain			
Yes			
No			
Chest			
Yes			
No			
Gonads			
Yes			
No			