

A BRIEF UPDATE

From the Long-Term Follow-Up Study

January 2011

<http://ltfu.stjude.org>

Topic: DENTAL HEALTH

Why did we study participants' dental health?

Treatments including radiation and chemotherapy in children can result in problems with oral health.

Who participated in this study?

11,353 Long-Term Follow-Up Study participants (8522 Survivors and 2831 Siblings)

- 50 percent females and 50 percent males
- 87 percent white non-Hispanic
- Between 15 and 34 years old

What we studied:

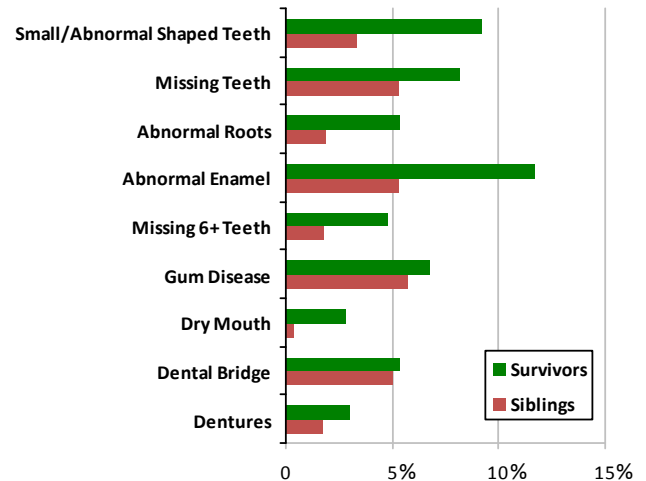
Dental abnormalities reported by study participants and experiences that predict having dental problems. The dental abnormalities we studied included missing teeth, decreased enamel on the surface of teeth, abnormally shaped or small teeth, gum disease, having five or more cavities, wearing a dental bridge or dentures, and having a severely dry mouth (*xerostomia*).

We found that . . .

72 percent of survivors reported that they had visited a dentist in the past year.

When compared to siblings, survivors were:

- 3 times more likely to have small or abnormally shaped teeth
- 3 times more likely to have abnormal roots
- 2½ times more likely to have decreased enamel on their teeth
- 2½ times more likely to have lost 6 or more teeth
- 10 times more likely to have a severely dry mouth



Percent of Survivors and Siblings with Dental Problems

At increased risk were . . .

- People younger than age 5 at the time of their cancer treatment
- Those who had higher doses of radiation to the teeth
- Those who had high exposure to the alkylating agent cyclophosphamide

In summary:

Survivors of childhood cancer who received radiation to the jaw or alkylating agent chemotherapy, such as cyclophosphamide, before the age of 5 years should be checked regularly for dental problems. All survivors of childhood cancer should practice good dental health (more on other side).

Reference

Kaste SC, Goodman P, Leisenring W, Stovall M, Hayashi RJ, Yeazel M, Beiraghi S, Hudson MM, Sklar CA, Robison LL, Baker KS. Impact of Radiation and Chemotherapy on Risk of Dental Abnormalities. *Cancer* 2009; 115(24):5817-27.

Dental Health Following Childhood Cancer Treatment

Adapted from the Children's Oncology Group Health Link

<http://www.survivorshipguidelines.org>

What are the risk factors for dental problems after childhood cancer treatment?

- Treatment with chemotherapy before your permanent teeth were fully formed, especially before the age of 5
- Radiation that included the mouth and/or salivary glands
- Treatment with azathioprine (after a bone marrow transplant)
- Chronic graft-versus-host disease (after a bone marrow transplant)

What should you do to keep your teeth and mouth as healthy as possible?

- See your dentist at least every six months. Make sure your dentist knows about the treatment you received. **(Ask your oncologist for a summary of your treatment.)** Be sure that your visit includes an oral cancer screening.
- Tell your dentist immediately if you have any signs of infection in your mouth or gums, such as redness, tenderness, excessive bleeding of gums, painful teeth, or areas of increased sensitivity.
- Always practice good oral health habits: brush your teeth and tongue twice a day, floss at least once a day, and follow all of your dentist's recommendations.
- Remember that your diet and other health habits affect your oral health, too!
 - Limit sweets and carbohydrate-rich foods.
 - Don't use tobacco products.
 - Drink alcohol only in moderation (since alcohol may also increase other problems following childhood cancer treatment).

What does your dentist need to know about your health?

Always let your dentist know if you have or had any of the following:

- Shunt (tube to drain fluid from the brain)
- Limb salvage procedure (replacement of bone with a metal rod or bone graft)
- Leaky or scarred heart valve (this sometimes happens after radiation to the chest)
- Splenectomy (surgical removal of the spleen)
- Radiation dose to the spleen of 40 Gray (Gy) or more. This dose is sometimes written as 4000 centigray (cGy) or 4000 rads.
- Currently active chronic graft-versus-host disease following stem cell transplant

What do you and your dentist need to know about the risk of osteoradionecrosis?

- Osteoradionecrosis (**ORN**) is a problem with bone healing that sometimes happens in people who received high doses of radiation, especially to the jaw. Symptoms can include mouth pain, jaw swelling, and difficulty opening the mouth fully. It is important to know that risk of **ORN** does not decrease with the passage time after radiation treatment.
- **ORN** is uncommon but it can occur when a survivor undergoes a dental procedure like pulling a tooth, or other surgery that involves the jawbone. If you need this type of dental work, there are special treatments that can be done to lessen the risk of **ORN**. For example, oxygen that is under pressure can be given before dental procedures to help with healing.
- If you received radiation to the jaw you should:
 - Tell your dentist so he or she can get details about the treatment before doing any procedures that could lead to **ORN**.
 - Have regular dental care and take good care of your teeth and gums because the risk of cavities is higher for people who received large doses of radiation.

For more information about dental health issues following childhood cancer treatment:

American Dental Association website (click on "Oral Health Topics")

www.ada.org

The American College of Oral and Maxillofacial Surgeons

www.acoms.org

Patient Centers website (click on "Head and Neck")

<http://www.patientcenters.com/survivors/news/reading/html>