

“SSFL Affected Area” Pediatric Cancer Cluster Findings 2017

Self Reported and Imputed Data findings compiled by
Melissa Bumstead and Jennifer Harris

Dear Supervisor Barger and Supervisor Kuehl,

I am a West Hills resident, and I am also a cancer mom.

I have been working over the last few years to compile a map of the children in my community with childhood cancer. I had met too many other cancer moms while in the hospital. We were concerned to find we lived so close to each other, especially since childhood cancer is so rare- only affecting 0.02% of America's children population. We began to map ourselves and found that we all live within 20 miles of the Santa Susana Field Lab (SSFL).

Our map is not conclusive, I understand it's limitations being self-reported and being in a large area with a small sample size (in addition to our map under-representing the Spanish Speaking population which could double the amount of children represented). However, the pediatric cancers we are showing on our map are especially rare, even in the rare world of pediatric cancer. We have worked out the numbers to show that we are above the national average for three rare pediatric cancers.

I believe we have early evidence of a pediatric cancer cluster surrounding the SSFL.

A study done by Dr. Morgenstern, defined a two-mile radius of 60% increased cancer risks for adults. However, these studies only research adult residents who live within the two mile radius. They are not able to study the effects of the toxic and nuclear waste on people who work nearby, shop nearby, or children who go to school or play nearby. And though our map can't prove that the SSFL is causing a pediatric cancer cluster, Daniel Hirsch (Director, Program on Environmental and Nuclear Policy at UC Santa Cruz) did say that the results of our map match the expected effect that the containments would cause.

That's why I'm wholly grateful for Supervisor Barger's and Supervisor Kuehl's resolution urging DOE to comply with the SSFL cleanup agreements. Thank you for holding the Department of Energy accountable to their original promise for a 100% cleanup. I feel strongly that the children of West Hills, Simi Valley and surrounding areas deserve to live in a toxic and nuclear free environment.

I am grateful that Supervisor Barger and Supervisor Kuehl feel the same.

Sincerely,

Melissa Bumstead
www.TeamGraceEllen.com
(818) 298-3192

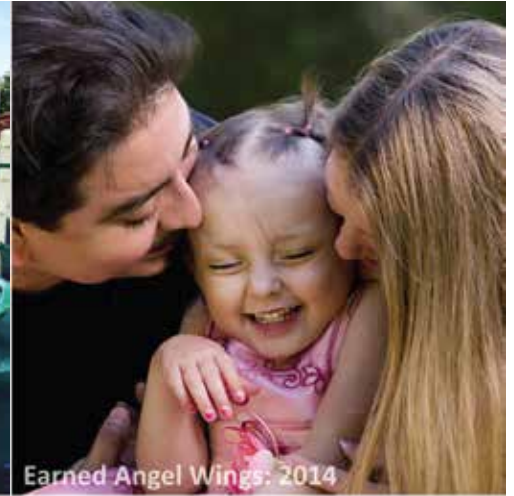
FaceBook: PARENTSvsSSFL



West Hills
PH+ Leukemia, 2014
1 in 72 cases in the USA every year



Simi Valley
Neuroblastoma, 2013
1 in 650 cases in the USA every year



Earned Angel Wings: 2014

Bell Canyon
Neuroblastoma, 2011
1 in 650 cases in the USA every year



Thousand Oaks
Rhabdomyosarcoma, 2013
1 in 350 cases in the USA every year



Northridge
Langerhans Cell Histiocytosis, 2015
1 in 24 cases in the USA every year



West Hills
OPHG Brain Tumor, 2013
1 in 25 cases in the USA every year



Santa Clarita
T-cell Leukemia, 2015
1 in 800 cases in the USA every year



Earned Angel Wings: 2015

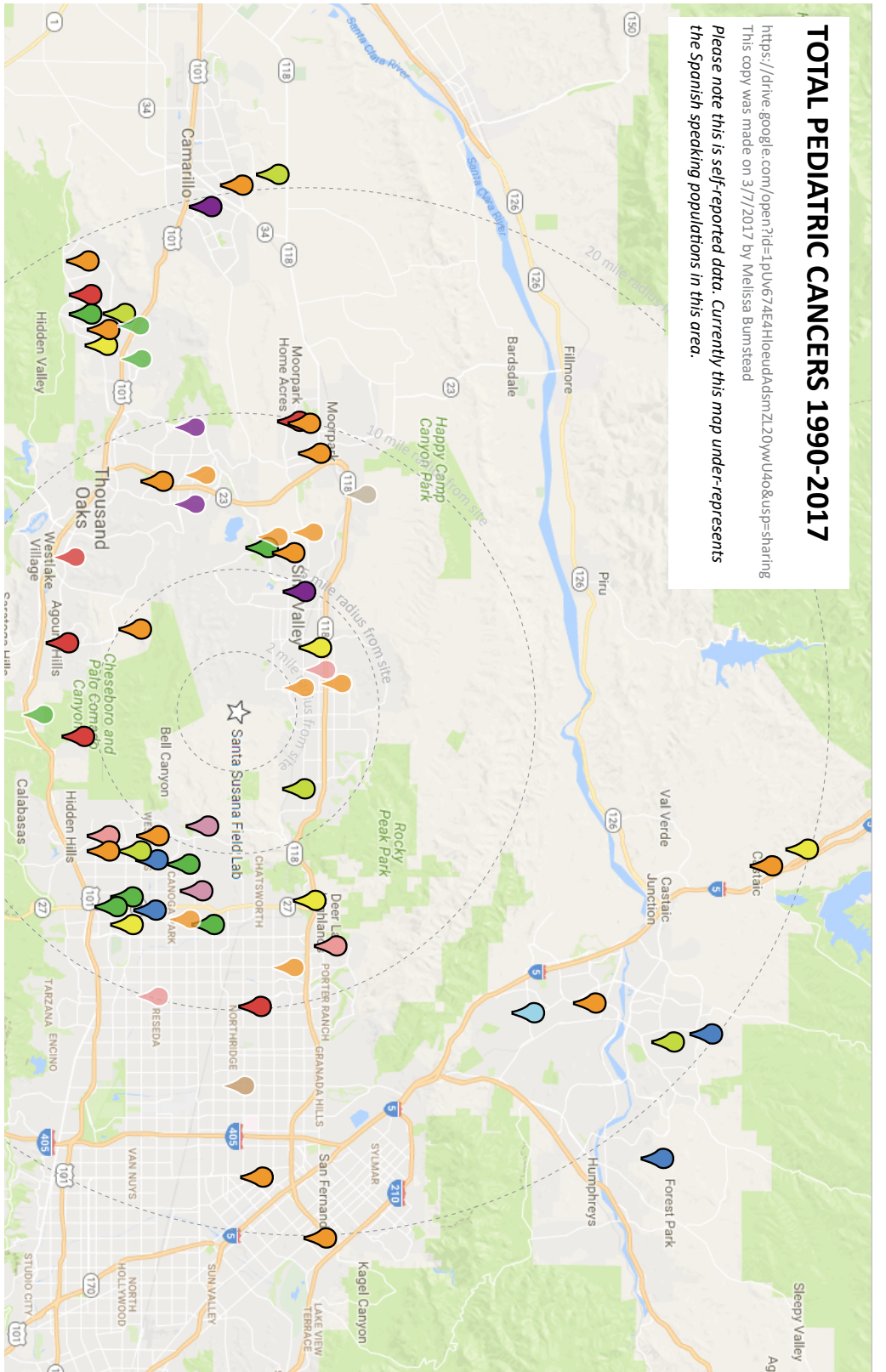
Canoga Park
Neuroblastoma, 2014
1 in 650 cases in the USA every year



Simi Valley
T-cell Leukemia, 2015
1 in 800 cases in the USA every year

TOTAL PEDIATRIC CANCERS 1990-2017

<https://drive.google.com/open?id=1pUv674E4HioeudakdsMZL20WUa0&usp=sharing>
 This copy was made on 3/7/2017 by Melissa Bumstead
 Please note this is self-reported data. Currently this map under-represents the Spanish speaking populations in this area.



PEDIATRIC TUMOR CANCERS 2011-2017

- Pediatric Rhabdomyosarcoma: 350 New Cases/yearly/nationally*
- Pediatric Neuroblastoma: 650 New Cases/yearly/nationally
- Pediatric Ewing Sarcoma: 200 New Cases/yearly/nationally*
- Pediatric Kidney Cancers: 500 New Cases/yearly/nationally
- Pediatric Brain Tumors: Varies By Type/yearly*

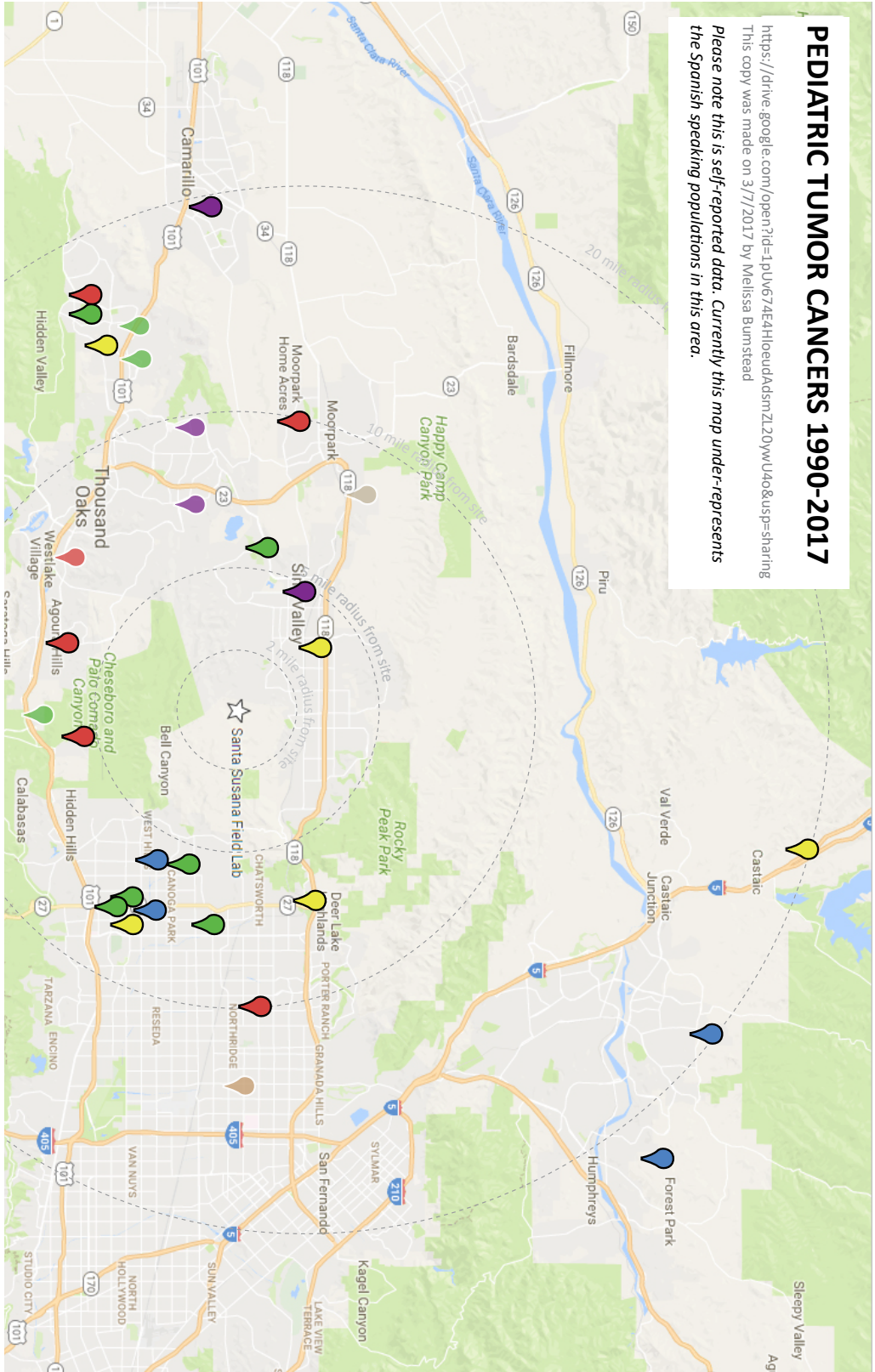
PEDIATRIC BLOOD CANCERS 2011-2017

- Pediatric Hodgkin's Lymphoma: 500 New Cases/yearly/nationally
- Pediatric Aml Leukemia: 600 New Cases/yearly/nationally
- Pediatric T-cell Lymphoma/leukemia: 800 New Cases/yearly/nationally
- Rare Strain (Ap1 And Ph+) Leukemia: 300 New Cases/yearly/nationally
- Leukemia (High And Low Risk): 2,514 New Cases/yearly/nationally

* ABOVE NATIONAL AVERAGE FOR RHABDOMYOSARCOMA, EWING SARCOMA, AND OPTIC PATHWAY HYPOTHALAMIC GLIOMA (BRAIN TUMOR)

PEDIATRIC TUMOR CANCERS 1990-2017

<https://drive.google.com/open?id=1pUv674E4HioeudakdsMZL20WU4o&usp=sharing>
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- Pediatric Ewing Sarcoma: 200 new cases/yearly/nationally*
- Pediatric Kidney Cancers: 500 new cases/yearly/nationally
- Pediatric Brain Tumors: varies by type/yearly*

* ABOVE NATIONAL AVERAGE FOR RHABDOMYOSARCOMA, EWING-SARCOMA, AND OPTIC PATHWAY HYPOTHALAMIC GLIOMA (BRAIN TUMOR)

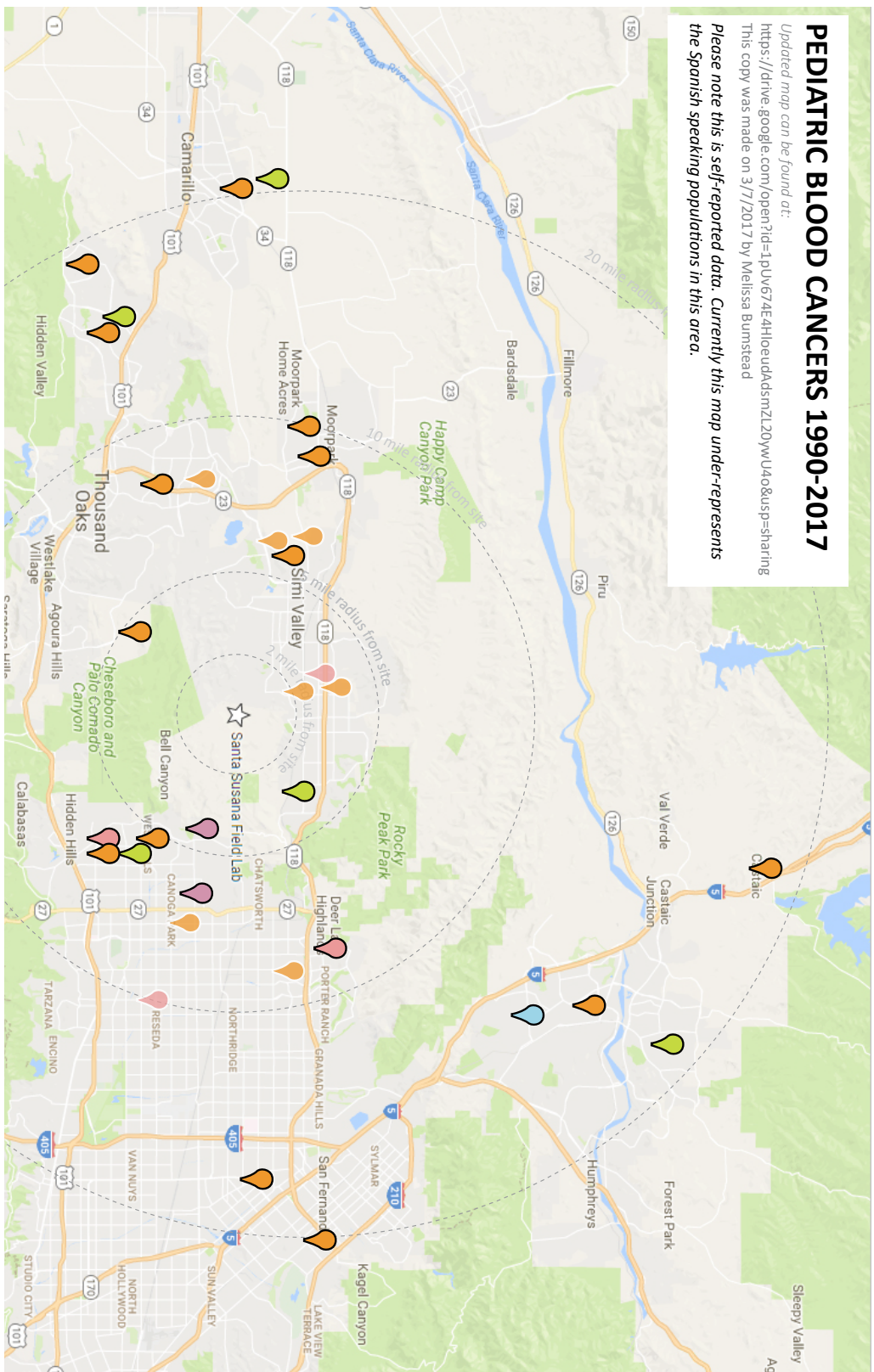
PEDIATRIC TUMOR CANCERS 1990-2010

- Pediatric Rhabdomyosarcoma: 350 new cases/yearly/nationally
- Pediatric Neuroblastoma: 650 new cases/yearly/nationally
- Pediatric Ewing Sarcoma: 200 new cases/yearly/nationally
- Pediatric Kidney Cancers: 500 new cases/yearly/nationally
- Pediatric Brain Tumors: varies by type/yearly
- melanoma at birth: unknown new cases/yearly/nationally
- Pleuropulmonary (lung) Blastoma: unknown new cases/yearly/nationally

PEDIATRIC BLOOD CANCERS 1990-2017

Updated map can be found at:
<https://drive.google.com/open?id=1PjUv674E4HloeuadaSmZL20wU4o8usps-sharing>
 This copy was made on 3/7/2017 by Melissa Bumstead

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PEDIATRIC BLOOD CANCERS 2011-2017

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- Pediatric AML Leukemia: 600 new cases/yearly/nationally
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Pediatric Rhabdomyosarcoma

Rhabdomyosarcoma:

Sarcomas are cancers that develop from connective tissues in the body, such as muscles, fat, bones, the linings of joints, or blood vessels. There are many types of sarcomas. Rhabdomyosarcoma (RMS) is a cancer made up of cells that normally develop into skeletal muscles. Grouping includes Embryonal rhabdomyosarcoma (ERMS), Alveolar rhabdomyosarcoma (ARMS), and Anaplastic rhabdomyosarcoma. About 350 new cases of RMS occur each year in the United States. The number of new cases has not changed much over the past few decades. RMS is slightly more common in boys than in girls. No particular race or ethnic group seems to have an unusually high rate of RMS.¹

Hypothesis:

I assume that because the population of “SSFL Affected Areas” is 9.13 of Los Angeles/ Ventura County population, that we should have less than 9.13 children with Rhabdomyosarcoma in the “SSFL Affected Area,” or 3.5 children over a three-year range (2011-2014).

Stats on RMS from cancer.org

There are about 350 new cases of Rhabdomyosarcoma each year in the United States according to American Cancer Society. This number has remained about the same for many years.²

Assumptions

- 1 in 211,262 children are expected to be diagnosed with new cases of Rhabdomyosarcoma yearly in America
- 12 children in Los Angeles are expected to be diagnosed with new cases of Rhabdomyosarcoma yearly
- 1 child in Ventura county are expected to be diagnosed with new cases of Rhabdomyosarcoma yearly
- 13 total children in the Los Angeles/Ventura Counties are expected to be diagnosed with new cases of Rhabdomyosarcoma yearly
- Over a three-year span, 38 total children in the Los Angeles/Ventura Counties are expected to be diagnosed with a new case of Neuroblastoma

How we fit into the National Average

- Over a four-year span, we would expect 3.5 total children in the “SSFL Affected Area” to be diagnosed with a new case of Neuroblastoma
- We have 5 children with Neuroblastoma on our map in the “SSFL Affected Areas” in a four-year span from 2011-2015

Rhabdomyosarcoma Conclusion

We have 5 children over a three-year span (2011-2014), out of the expected 3.5, and therefore our “SSFL Affected Areas” is above the National average for pediatric Rhabdomyosarcoma rates.

¹ <https://www.cancer.org/cancer/rhabdomyosarcoma/about/key-statistics.html>

² <https://www.cancer.org/cancer/rhabdomyosarcoma/about/key-statistics.html>

Pediatric Ewing Sarcoma

Ewing Sarcoma:

Ewing Sarcoma is a cancerous tumor that grows in the bones or in the tissue around bones (soft tissue) often the legs, pelvis, ribs, arms or spine. Ewing sarcoma can spread to the lungs, bones and bone marrow. Ewing sarcoma is the second most common type of bone cancer in children, but it is very rare. About 200 children and young adults are found to have Ewing sarcoma each year in the United States. It does not appear to be inherited (passed down in families).³

Hypothesis:

I assume that because the population of “SSFL Affected Areas” is 9.13% of Los Angeles/ Ventura County population, that we should have less than 9.13% children with Neuroblastoma in the “SSFL Affected Area,” or 2 children over a three-year span (2011-2014).

Stats on Ewing Sarcoma

200 cases/year nationally according to St Jude ⁴

Assumptions

- 1 in 333,000 children Counties are expected to be diagnosed with new cases of Ewing Sarcoma yearly in America
- 7 children in Los Angeles Counties are expected to be diagnosed with new cases of Ewing Sarcoma yearly
- 1 children in Ventura county Counties are expected to be diagnosed with new cases of Ewing Sarcoma yearly
- Less than 8 total children in the Los Angeles/Ventura Counties Counties are expected to be diagnosed with new cases of Ewing Sarcoma yearly
- Over a three-year span, 23 total children in the Los Angeles/Ventura Counties are expected to be diagnosed with a new case of Ewing Sarcoma

How we fit into the National Average

- Over a three-year span, we would expect 2 total children in the “SSFL Affected Area” to be diagnosed with a new case of Ewing Sarcoma.
- We have 4 children with Ewing Sarcoma on our map in the “SSFL Affected Areas” in a three-year span from 2011-2014.

Ewing Sarcoma Conclusion

We have 4 children over a three-year span (2011-2014), out of the expected 2 and therefore our “SSFL Affected Areas” is above the National average for pediatric Ewing Sarcoma rates.

³ <https://www.stjude.org/disease/ewing-sarcoma.html>

⁴ <https://www.stjude.org/disease/ewing-sarcoma.html>

Pediatric Optic Pathway Hypothalamic Glioma (Eye/Brain Tumor)

Optic Pathway Hypothalamic Glioma:

An optic pathway Hypothalamic glioma (also called an optic nerve glioma) is a slow-growing brain tumor that arises in or around the optic nerve, which connects the eye to the brain. As the tumor progresses, it presses on the optic nerve, causing a child’s vision to worsen. Blindness can occur, but only in about 5 percent of cases. While these are serious tumors, they have a high cure rate.

Hypothesis:

I assume that because the population of “SSFL Affected Areas” is 9.13% of Los Angeles/ Ventura County population, that we should have less than 9.13% children with optic pathway Hypothalamic glioma in the “SSFL Affected Area,” or 0.08 children in one year (2013).

Stats on Optic Pathway Hypothalamic Glioma:

25 cases/year nationally

Assumptions

- 1 in 2,957,674 children Counties are expected to be diagnosed with new cases of Optic Pathway Hypothalamic Glioma yearly in America
- 1 child in Los Angeles Counties is expected to be diagnosed with new cases of Optic Pathway Hypothalamic Glioma yearly
- 0 children in Ventura county Counties are expected to be diagnosed with new cases of Optic Pathway Hypothalamic Glioma yearly
- Less than 1 total children in the Los Angeles/Ventura Counties Counties are expected to be diagnosed with new cases of Optic Pathway Hypothalamic Glioma yearly
- Over a one-year span, 1 total children in the Los Angeles/Ventura Counties are expected to be diagnosed with a new case of Optic Pathway Hypothalamic Glioma

How we fit into the National Average

- Over a one-year span, we would expect 1 total children in the “SSFL Affected Area” to be diagnosed with a new case of Optic Pathway Hypothalamic Glioma.
- We have 2 children with Optic Pathway Hypothalamic Glioma on our map in the “SSFL Affected Areas” in one year, 2013.

Optic Pathway Hypothalamic Glioma Conclusion

We have 2 children in one year (2013), out of the expected 1 and therefore our “SSFL Affected Areas” is above the National average for pediatric Optic Pathway Hypothalamic Glioma rates.

Rarity of Pediatric Cancers in “SSFL Affected Area”

Notes

Notes:

I have assumed that within statistical data there will be outliers that will not be within the normal ranges, but these “abnormalities” can still fall within statistical norms. However, you would not expect these rarities to continue to happen. I have assumed because these rare cancers, with very small likelihoods continue to happen, that the children with cancer on our map can’t be considered to be normal.

Optic Pathway Hypothalamic Glioma: 25 cases nationally/ yearly

- D Boy, West Hills, diagnosed 2013
- S Girl, West Hills, diagnosed 2013
- Both of these children from West Hills lived on Fallbrook Avenue and were diagnosed the same year.

Ewing Sarcoma: 200 cases nationally/yearly

- S girl, West Hills, diagnosed 2015
- M girl, West Hills, diagnosed in 2015,
- Both females diagnosed with the same cancer attended Canoga Park High the same year.

Langerhans Cell Histiocytosis: 36 cases nationally/yearly

- G Boy, dx 2015 lives in W. Northridge
- According to the National Cancer Institute (cancer.gov), being exposed to certain chemicals, such as benzene may be a primary cause of this cancer
- Benzene is one of the known contaminants at the SSFL site

Demographic & Imputed Assumptions

Imputed Assumptions on “SSFL Affected Area”

Our combined population in the “SSFL Affected Areas,” based on the 2013 census ¹ is **1,007,910** within 20 miles from the SSFL site, inside the Los Angeles and Ventura Counties including:

- Agoura Hills (included under Thousand Oaks Census)
- Bell Canyon (2,049)
- Calabasas (23,058)
- Canoga Park (60,000)
- Castiac (19,015)
- Chatsworth (41,255)
- Hasley Canyon (1,137)
- Hidden Hills (1,903)
- Newbury Park (included under Thousand Oaks Census)
- Oak Park (included under Thousand Oaks Census)
- Santa Clarita (176,320)
- Simi Valley (126,181)
- Thousand Oaks (129,339)²
- West Hills (41,426)
- Westlake Village (included under Thousand Oaks Census)
- Woodland Hills (63,000)
- Winnetka (40,943)
- Northridge (57,561)
- Granada Hills (51,419)
- Van Nuys (136,443)
- Porter Ranch (24,923)
- Sylmar (69,499)

Based on this number, 1,007,910 residents within the “SSFL Affected Areas,” is 9.13% of Los Angeles County (10,200,000) and Ventura County (83,9620) combined.

Demographics for federal, state and local levels

- 73,941,848 population of children nationally³
- 2,324,837 population of children in Los Angeles⁴
- 199,398 population of children in Ventura county⁵
- There are 10,200,000 million people in Los Angeles County as of 2013 US Census
- There are 839,620 people in Ventura County as of 2013 US Census
- There are 11,039,620 people in the Los Angeles and Ventura Counties Combined.
- Our combined population based of 2013 census ⁶ is **725,626** in the “SSFL Affected Areas”

1 https://en.wikipedia.org/wiki/List_of_cities_in_Los_Angeles_County,_California

2 https://en.wikipedia.org/wiki/Thousand_Oaks,_California

3 <https://naeyc.org/policy/advocacy/ChildrenandFamiliesFacts>

4 <http://www.kidsdata.org/topic/32/childpopulation/>

5 <http://www.kidsdata.org/topic/32/childpopulation/>

6 https://en.wikipedia.org/wiki/List_of_cities_in_Los_Angeles_County,_California

Method for Reaching Imputed Values:

The CA Cancer Registry does not release pediatric cancer statistics to the public. Similarly, no other city or state has pediatric cancer stats available to the public. With the assistance of Jennifer Harris, a professional statistician, here is how we've reached our imputed data.

- First we found out there are 72 million children in America.
- Then we found out how many cases of each particular cancer (example: Ewing Sarcoma) there are nationally/ yearly- Ewing Sarcoma has 200 new cases every year in America.
- We then took the child population of Los Angeles and Ventura County and figured out the estimate as to how many kids in LA/Ventura should have Ewings, based off the national average. So total, Los Angeles and Ventura should have 6.83 kids with this cancer, approximately.
- Then we found the kids on our map within a 20 mile radius of the SSFL. We have 4 kids with Ewings, over a three year span, from 2011-2014.
- We then multiplied the expected Los Angeles/Ventura expected cancers of 6.83×3 to get about 20 kids in the LA/Ventura area that should have Ewings Sarcoma over a three year span.
- We then found all the population data for every city within the “SSFL Affected Area,” and added it together (I can show details if needed, but I was pretty careful to get every city) and found a population of 1,007,910 of what we called the “SSFL Affected Area.”
- The “SSFL Affected Area” is about 9.13% of the Los Angeles/Ventura population of 11,039,620.
- Therefore, we projected that the “SSFL Affected Area” should have approximately 9.13% of the Los Angeles/Ventura pediatric cancer population, for the same span of years that we set earlier, or three years.
- We then compared the projected rates of Ewings Sarcoma for the “SSFL Affected Area” over three years to be 1.87 children
- We then found that for that same year span, we have 4 children, instead of the estimated 1.87.
- Therefore we feel that our hypothesis, that the “SSFL Affected Area” has an above national average for Ewings Sarcoma, is correct.

Method for Reaching Imputed Values:

Type of Cancer	# New Cases of Cancer Yearly & Nationally 2013	Incident Rate: ACS Statistics Center 2009-2013	1 in every X Children get (type) cancer yearly - national 2013	% of children that get (type) cancer yearly - national 2013	Expected # of Children to develop cancer yearly - LA County	Expected # of Children to develop cancer yearly - Ventura County	Expected # of Children to develop cancer yearly - LA+ Ventura area*	Expected # of Children to develop cancer yearly - SSFL area*	Known Cases of Children in SSFL Affected Area with this Cancer	Range of Years the cancers happened	Total Years the cancers happened	Expected # of Children to develop cancer - SSFL area over "Range of Years"	Expected # of Children to develop cancer - LA + Ventura over "Range of Years"
Neuroblastoma	592	0.80	125000	0.00080%	19	2	20	2	5	2011-2015	4	7.37	81
Rhabdomyosarcoma	370	0.50	200000	0.00050%	12	1	13	1	5	2011-2014	3	3.46	38
Ewing Sarcoma	222	0.30	333333	0.00030%	7	1	8	1	4	2011-2014	3	2.07	23
Pediatric Hodgkin's Lymphoma	887	1.20	83333	0.00120%	28	2	30	3	1	2014	1	2.77	30
ALL Leukemias * (Not AML)	2514	3.40	29412	0.00340%	79	7	86	8	20	2011-2016	5	39.18	429
Leukemia High Risk: T-cell	811		91174	0.00110%	25	2	28	3	5	2012-2015	3	7.58	83
Leukemia High Risk: PH+	150		492946	0.00020%	5	0	5	0	1	2014	1	0.47	5
Leukemia High Risk: APL	150		492946	0.00020%	5	0	5	0	1	2016	1	0.47	5
Leukemia High Risk: ANLL	592	0.80	125000	0.00080%	19	2	20	2	2	2014-2016	2	3.69	40
Retinoblastoma	222	0.30	333333	0.00030%	7	1	8	1	0	0	0	0.00	0
Teratoid/Rhabdoid (brain tumor)	30		2464728	0.00004%	1	1	1	1	1	2015	1	0.09	1
Optic Pathway Hypothalamic Glioma	25		2957674	0.00003%	1	0	1	0	2	2013	1	0.08	1
DIPG (brain tumor)	300		246473	0.00041%	9	1	10	1	1	2015	1	0.94	10
Medulloblastoma (brain tumor)	500		147884	0.00068%	16	1	17	2	1	2015	1	1.56	17
Brain/Nervous Cancers Total *	2366	3.20	31250	0.00320%	74	6	81	7	6	2015	1	7.37	81
Nephroblastoma (Wilms Liver Tumor)	444	0.60	166667	0.00060%	14	1	15	1	2	2013-2015	2	2.77	30

* Calculated cumulatively and separately

Population children nationally 2013 Census
 children in Los Angeles County 73941848
 children in Ventura county 2324837
 children in LA+Ventura 199398
 Population of Los Angeles County 2524235
 Population of Ventura County 230463
 Population of Ventura+ LA 1020000
 Population of Ventura+ LA 839620
 Population of SSFL Affected Area 11098620
 SSFL area is % of Los Angeles/Ventura 1007910
 0

using this percentage of 0.13 we can estimate the number of children in SSFL area is .00913 * 2524235 or ... 230463
 * Using Imputed Value in Calc

<https://cancerstatisticscenter.cancer.org/#/data-analysis/ChildInRate/compare/InRate>

Childhood Cancer Facts

Risk Factors and Causes of Childhood Cancer from Cancer.gov website¹

A risk factor is anything that affects the chance of getting a disease such as cancer. Different cancers have different risk factors.

In adults, lifestyle-related risk factors, such as being overweight, eating an unhealthy diet, not getting enough exercise, and habits like smoking and drinking alcohol play a major role in many types of cancer.

“But lifestyle factors usually take many years to influence cancer risk, and they are not thought to play much of a role in childhood cancers.”

A few environmental factors, such as [radiation exposure](#), have been linked with some types of childhood cancers. Some studies have also suggested that some parental exposures (such as smoking) might increase a child’s risk of certain cancers, but more studies are needed to explore these possible links. So far, most childhood cancers have not been shown to have environmental causes.

In recent years, scientists have begun to understand how certain changes in the DNA inside our cells can cause them to become cancer cells. DNA is the chemical that makes up our genes, which control nearly everything our cells do. We usually look like our parents because they are the source of our DNA. But DNA affects more than just how we look. It also influences our risks for developing certain diseases, including some kinds of cancer.

- Some genes control when our cells grow, divide into new cells, and die.
- Genes that help cells grow, divide, or stay alive are called **oncogenes**.
- Genes that slow down cell division or cause cells to die at the right time are called **tumor suppressor genes**.
- Cancers can be caused by DNA changes that turn on oncogenes or turn off tumor suppressor genes.

Inherited versus acquired gene mutations

Some children inherit DNA changes (mutations) from a parent that increase their risk of certain types of cancer. These changes are present in every cell of the child’s body, and can often be tested for in the DNA of blood cells or other body cells. Some of these DNA changes are linked only with an increased risk of cancer, while others can cause syndromes that also include other health or developmental problems.

But most childhood cancers are not caused by inherited DNA changes. They are the result of DNA changes that happen early in the child’s life, sometimes even before birth. Every time a cell divides into 2 new cells, it must copy its DNA. This process isn’t perfect, and errors sometimes occur, especially when the cells are growing quickly. This kind of gene mutation can happen at any time in life and is called an **acquired mutation**.

Acquired mutations start in one cell. That cell then passes the mutation on to all the cells that come from it. These acquired DNA changes are only in the person’s cancer cells and will not be passed on to his or her children.

Sometimes the causes of gene changes in certain adult cancers are known (such as cancer-causing chemicals in cigarette smoke), but the reasons for DNA changes that cause most childhood cancers are not known. Some may have outside causes like radiation exposure, and others may have causes that have not yet been found. But many are likely to be caused by random events that sometimes happen inside a cell, without having an outside cause.

¹ <https://www.cancer.org/cancer/cancer-in-children/risk-factors-and-causes.html>

Childhood Cancer Rates Are Rising. Why?²

By Andy Miller, and Brenda Goodman, MA, Reviewed by Hansa D. Bhargava, MD on October 18, 2016, Published on WebMd

The numbers are small because any childhood [cancer](#) is rare. Just one of every 100 new [cancer](#) diagnoses in the United States is a childhood case.

Still, the National Cancer Institute (NCI) says there has been a significant increase in the overall rate of childhood cancers in recent decades -- up 27% since 1975 in kids under age 19, according to data collected by the NCI’s Surveillance, Epidemiology, and End Results (SEER) Program.

The news comes as the overall incidence of adult cancers has fallen.

The rise seems to be driven, in large part, by an increase in [leukemia](#), which is up almost 35% since 1975. Leukemia is the most common cancer in kids. Soft tissue cancers, like those that develop in bones or muscles, are up nearly 42%. Non-Hodgkin’s lymphoma is up 34%.

“When you see an increase like that -- that fast -- in a short period of time, most likely it is going to be driven by some exposure to environmental factors,” says Catherine Metayer, MD, PhD, an adjunct professor at the University of California, Berkeley, School of Public Health. She and her team just won a \$6 million grant from the National Institute of Environmental Health Sciences to study the causes of leukemia in children.

“In the environment, a lot of things have changed. A lot of chemicals have been brought in. We are all exposed to many of them. So most likely the increase has been driven by some exposure to environmental factors, combined with genetics,” she says.

The increase, strangely, hasn’t received much attention, Metayer says.

“The word is not out,” she says. “I don’t know if because it’s a rare disease, it didn’t get as much attention compared to [asthma](#) and other conditions in children.”

2 <http://www.webmd.com/news/breaking-news/cancer-strikes-a-small-town/20161020/childhood-cancer-rates-rising>

Bio

Jennifer Harris

Jennifer Harris, of Thousand Oaks, is currently pursuing interest as an independent consultant, while also enjoying success as a wife and mother of three wonderful children. Prior to advising in the consulting sector, Jennifer was Director of Analytics at FNC Inc., where she focused her expertise toward designing and building analytic models as well as managing resources for studies focused on using data to enlighten social and banking communities to economic factors influencing property values. She earned a Masters in Applied Economics from California State University, Fullerton where her focus was in econometrics. In Spring of 2005 she published her thesis on Hedonic Pricing models for the Southern California housing market.

Melissa Bumstead

Melissa Bumstead, of West Hills, works part-time as the Marketing Director for the non-profit BumbleBee Foundation, providing support to pediatric cancer families. She is also a mom to two active children. When her four-year old daughter was diagnosed in 2014 with a rare strain of PH+ Leukemia, Melissa began to advocate in the childhood cancer world.

In 2015 Melissa began mapping local pediatric cancer families as she felt there were too many cases in her community. With the guidance and assistance of Jennifer Harris, she began using imputed and self-reported data to conclude that the “SSFL Affected Area” had pediatric cancer cases higher than the national average. It is her desire to educate the community of the risks associated living near chemical and nuclear contaminants on children.