

## Study Finds Increased Risk of Pancreatic Abnormalities in DES Daughters

DES Daughters and Sons may have an increased risk of disorders related to the pancreas, according to a new study. In addition, DES Daughters may have a small increased risk of pancreatic cancer, but the risk is based on a small number of total pancreatic cancer cases. The study did not find a similar risk of cancer for DES Sons.

The study, published in the *Journal of Developmental Origins of Health and Disease* in August 2020, was funded by the National Cancer Institute and conducted by the same research team that leads the DES Daughter Followup study, including Drs. Rebecca Troisi and Robert Hoover (now retired). (doi: 10.1017/S2040174420000872)

The researchers wanted to find out whether there appeared to be any link between prenatal DES exposure and risk of pancreatic cancer, pancreatic disorders, type 2 diabetes or gallbladder disease. (A swollen or inflamed gallbladder is one possible symptom of pancreatic cancer.)

The researchers looked at data from the DES Combined Cohort Study, which has tracked 5,667 adults exposed to DES in the womb and 3,315 unexposed adults from 1990 through 2017.

They used questionnaires filled out by participants every five years through 2016. When participants reported cancer diagnoses, the diagnosis was confirmed using pathology reports when possible.

The researchers compared the rates of each condition in both groups and then took into account differences among the study participants in age, sex, body mass index (BMI), smoking history and alcohol consumption because these factors might affect risk of the disorders they were investigating.

### Pancreas Disorder Findings

The study did not find any link between DES exposure and risk of diabetes or risk of gallbladder disease, in general. It did find an association between DES exposure and

pancreatic disorders, but these results were based on a small number of total pancreatic disorders across all participants.

There were 22 cases of pancreatic disorders in all DES-exposed participants, including 16 cases of pancreatitis. In the unexposed group, there were just two cases of pancreatitis.

Pancreatitis is an inflammation of the pancreas that can be acute (short-term) or chronic (long-term). Either type can involve serious complications, but acute

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## Does DES Cause Low Testosterone?

Since DES is an endocrine disruptor — which means it can disrupt natural hormones in the body — it's reasonable to wonder whether it could affect testosterone levels in DES Sons. Taking estrogen can suppress testosterone in adolescents or adults, but does exposure to large doses of estrogen in the womb affect later testosterone production?

As with many issues related to DES Sons, there is not a lot of research into this question, though there clearly should be. Low testosterone is something a variety of DES Sons have said they've experienced, but we weren't able to find any studies that directly

studied testosterone levels in DES Sons.

There have been studies looking at a wide range of other male reproductive disorders or abnormalities that have been associated with prenatal DES exposure. These include studies finding low sperm counts or a high percentage of abnormal sperm in DES Sons.

### Testosterone's Role

Testosterone is required for sperm production, so it's possible that the abnormal sperm or low sperm counts are related to testosterone levels, but no research we could find has directly looked at

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# DES Action USA Updates

## Join Us for DES Action's First Annual Meeting

DES Action USA is excited to host our First Annual Meeting on Tuesday, January 26, 2021, 4:00–4:45 p.m. ET, via Zoom.

An email invitation will be sent the first week of January. You'll need to RSVP, and we will send you the password to access the meeting.

Executive Director Suzanne B. Robotti will welcome members, provide instructions for the meeting and give a summary of the annual report. VOICE editor Tara Haelle and DES Action Community Manager Britt Vickstrom will also speak briefly. There will be time reserved for questions from members.

You are invited to send questions by January 20, 2021 to [britt@desaction.org](mailto:britt@desaction.org). We'll answer as many questions as time allows.

## Consider Joining One of Our Online Support Groups

The online support groups for DES Daughters and DES Men are safe places for discussing very personal issues that arise for DES Daughters. We live in the farthest reaches of the country but have developed a sense of community together via our online groups. What we talk about is private—just between us—so we can feel free to raise questions on topics we aren't comfortable bringing up with others. What is amazing is the depth of knowledge in the responses. It's a terrific resource for information and support from DES Daughters and Sons who wrestle with the effects of family relationships and medical diagnosis issues specific to DES exposure. To join one of the support groups, send an email to Community Manager Britt Vickstrom: [britt@desaction.org](mailto:britt@desaction.org).

## DES Action USA Once Again Gains Top-Rated Status

We're happy to announce that DES Action USA was once again awarded a Top-Rated Seal of Approval by Great Nonprofits. That has been the case every year since we first applied, and it is thanks to our loyal membership. Every year, you come through with messages about our integrity and donations that keep our cause alive. Thank you.



## Renew Your Membership

It's easier than ever to renew your membership. Just log into the site using the email you registered with and your password. If you don't remember your password, you can reset it.

If you no longer use the email you signed up with, send your new address to Britt Vickstrom at [britt@desaction.org](mailto:britt@desaction.org). She will set a temporary password for you.

Thank you for supporting DES Action USA with your membership.



## MISSION STATEMENT

The mission of DES Action USA is to identify, educate, empower and advocate for DES-exposed individuals.

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# Study Explores Links Between Endocrine Disruptors and Fibroids

DES is well known as the most potent of all endocrine-disrupting chemicals (EDCs), but other compounds can interfere with the endocrine system too. Many such EDCs are still present in our environment and in thousands of products we purchase or use every year.

A recent paper, funded by the National Institutes of Health, reviewed the current evidence related to EDCs and fibroids in women. (DOI:10.1097/MED.0000000000000578) Fibroids are noncancerous tumors that can cause pelvic pain, excess bleeding during periods and infertility.

Researchers and doctors still do not know what causes fibroids and have only identified a few risk factors for them. However, since estrogen and progesterone play an important role in fibroid growth, it's plausible that EDCs may also affect these hormones and therefore affect risk of fibroids.

The authors looked at human and experimental evidence on a wide range of different EDCs, including phthalates, parabens, environmental phenols, alternate plasticizers, DES, organophosphate esters (OPEs) and tributyltin.

Except DES and tributyltin, all of these chemicals have been commonly found in consumer products or packaging. (Tributyltin is primarily used in the paint used for ships' hulls to prevent barnacles and other sea creatures from attaching to them.) Phthalates and parabens are used in a wide range of personal care products.

These chemicals can enter the body by inhalation from the air, ingestion from the residue on food from packaging or absorption through the skin, but the body

normally metabolizes and discards them quickly.

The question is whether they have any impact before exiting the body. Since these chemicals can look to the body like hormones, they may affect the function and regulation of the body's hormones. But it's unknown if this happens, how much it happens, or whether it leads to other health concerns.

## The Findings

The authors looked at four studies published since 2018 that all measured certain EDCs found in participants' urine. Two studies looked only at women who had fibroids, and two others compared women who had fibroids to similar women without fibroids.

The first study, involving 57 women in the United States who all were diagnosed with fibroids, measured various phthalates in the women's urine. Researchers found that higher levels of these phthalates correlated with larger and more severe fibroids.

The second was a study of 45 U.S. women that also examined phthalates, but this one looked for a link with a specific biological process that scientists think is related to how fibroids form. They did find an association between that biological process and levels of phthalates in urine, but the findings varied based on women's race/ethnicity.

The third study was much larger, involving 484 women in South Korea: 95 of the women had fibroids and 336 women without them were a comparison (control) group. This one looked not only at phthalates but also at bisphenols (the class of chemicals that includes BPA found in different plastics), parabens, benzophenones and two

types of antibacterial chemicals (triclosan and triclocarban) that used to be commonly used in soaps and hand sanitizers. The FDA banned use of triclosan and triclocarban from hand soaps in 2016 and from hand sanitizers in 2017.

The researchers found that six of the 18 phthalates they looked at and one of the parabens were all associated with an increased risk of fibroids. The women in the study who used personal care products most frequently were the ones most likely to have higher levels of these chemicals and higher risk of fibroids.

Finally, the fourth study, also in South Korea, compared 32 women with fibroids to 79 women without fibroids. It focused on phthalates, OPEs and alternate plasticizers, and several EDCs in each group were linked to higher risk of fibroids.

The authors of the review also looked at experimental evidence from animal and lab research. They found some research showing that bisphenol A (BPA) and a phthalate called DEHP increased the growth of fibroid cells in lab experiments.

Ultimately, the authors concluded that multiple different EDCs are linked to the development and growth of fibroids. (The list is too long to include here.) Scientists are continuing to learn which ones pose the greatest risk and how they're involved in fibroid growth.

Until regulators stop the use of these chemicals in manufacturing, you can read ingredient labels, look up ingredients and learn about the products you use to help you choose products with fewer EDCs. Reducing how much packaged food you use may also help reduce exposure to EDCs.



# Q&A With DES Granddaughter Grace Radkins

*Grace Radkins, a 38-year-old librarian and DES Granddaughter residing in Chicago, is currently living with her third brain tumor. No doctor she's seen has acknowledged that her tumors might be related to her mother's exposure to DES in the womb, and other health issues have been repeatedly dismissed. Here Grace shares a bit of her story.*



## **Tell us how you learned about your DES history.**

My brother and I have known for a long time that our maternal grandmother was given DES. The child before my mother was conceived was stillborn. In addition to taking DES, my grandmother prayed to St. Gerard, the Catholic patron saint of mothers and childbirth, and promised that she would name her next child after him. Since it turned out to be a girl, my mom's middle name is Gerard, so DES has always been a part of the story of my mom's name.

I found out more recently that my mom learned about her own exposure when my grandmother first took her to the gynecologist in the mid-1970s. In reviewing my grandmother's health history, the doctor mentioned it, but he didn't provide any specific information.

## **In what ways have you been affected by your DES exposure?**

In 2002, when I was 19, I was

diagnosed with a brain tumor, specifically a central nervous system germ cell tumor. I was very likely born with the tumor, but it took until I was 19 to cause health problems that could be recognized as signs of a brain tumor.

No doctor I have ever spoken to about my DES exposure has acknowledged that it could be the source of the germ cell tumor. I believe my exposure is related because there is clearly a hormonal connection: Most germ cell tumors are found in the gonads (ovaries and testicles), and the clearest sign that the tumor has returned is if a blood test shows I am pregnant when I am not. In addition, my mother and brother live with reproductive system defects (tilted uterus and an undescended testicle), although no doctor has ever verified their exposure either.

Currently I am living with a third brain tumor, a meningioma tumor that is a side effect from the radiation therapy used to treat the recurrence of the germ cell tumor. I expect to have surgery in the next 18 to 24 months. I also live with additional conditions that are the results of damage caused by tumor growth and cancer treatments.

## **What health issues do you think might be connected to your DES exposure?**

I feel certain that DES exposure is the primary cause of the brain tumor I was born with, but I have to remind myself not to second-guess this in the face of so much

denial. Just because a doctor dismisses my concerns doesn't mean they aren't valid.

I was told by a neurologist that "nothing was wrong with me" a week before I was diagnosed with the first germ cell tumor. I was told by my oncologist that I needed physical therapy for fatigue when I complained about hip pain. It turned out that my joints were literally crumbling, a side effect of a chemotherapy medication, and that I would need two major surgeries.

Knowing better than my doctors feels like I am standing at the edge of a cliff; it doesn't make me feel very safe. But in this case, my health will not suffer if a doctor doesn't take me seriously. I have to keep holding on to what I know to be true.

## **Why did you join DES Action?**

I found DES Action through a Google search. Since my diagnosis, I periodically look up DES Grandchildren. Eighteen years ago I couldn't find anything. These days, there are at least a few mentions of us. I am pretty new to DES Action, but it means a lot to me to find a place where my experience of DES exposure is acknowledged as legitimate.

## **How has learning about your family's exposure to DES affected your views of the pharmaceutical and medical industry or government regulation?**

I am not surprised that DES

was prescribed for so long. We still live under a federal government in which men try to regulate women's health. Native American women were legally sterilized in the 1970s. It was headline news not long ago that gynecologists with U.S. Immigration and Customs Enforcement are abusing women in their care.

Women's health has not been a priority for our government. Even though I know that, I am overwhelmed by the fact that my family and I are part of the collateral damage of poor government policy. I am frightened by the fact that DES exposure affects so many people and yet is so easily dismissed.

I am outraged that DES was prescribed for decades, even after it had been shown to be ineffective against miscarriages and premature births. I can't even begin to comprehend how we can make this right or how we make sure something similar doesn't happen again.

### What do you still want to know about DES exposure?

I'm pretty biased, but I would like there to be a better understanding of the cancer risks facing DES Grandchildren. Now that my brother has kids, my family and I also hope that research is being done on the health risks facing DES Great-grandchildren.

### What is your hope for the future based on your experience as a DES Granddaughter?

As I continue to deal with the evolving side effects of the tumors and treatment, I hope that I can learn to adjust and be happy with a life that looks very different from what I expected even five years ago.

I hope that our healthcare system changes in such a way that people with pre-existing conditions aren't always afraid of losing their insurance. I hope that just as our nation has been learning to listen to and acknowledge the LGBTQ+ community and people of color, the same can start to happen for people with disabilities.



## Time to Finish the Job with Makena

Everyone in the DES-exposed community understands how devastating it is to discover that a drug that was supposed to prevent something awful actually caused something awful instead.

DES Action USA's mission is to identify, educate, empower and advocate for DES-exposed individuals.

Part of that mission means watching out for other medications that might cause harm and ensuring that people in the DES community and beyond are aware of the risk. Every drug has side effects, so a drug that doesn't work—which offers no benefit but may cause harm—must be removed from use.

DES Action and MedShadow are thrilled to announce that we have made huge progress with advocacy against continued use of one such drug, called Makena. Last fall we reached out to the DES Action and MedShadow community with a petition to stop Makena use, and on October 5th, 2020, the FDA's Center for Drug Evaluation and Research (CDER) recommended that the drug

be removed from the market.

But the fight is not over: Makena's manufacturer, AMAG, has challenged the FDA and requested another review.

Makena is a hormone that has long been prescribed to pregnant women to prevent premature birth. But there isn't evidence that taking Makena prolongs pregnancy. Instead, it exposes both mothers and their babies to unknown risks without any benefit.

The manufacturer's request is not warranted. AMAG has had 10 years to produce a study that shows that Makena helps pregnancies, but the company has not. **Please sign our new petition asking the FDA to stand by its decision and remove Makena from the market.**

To find the petition, go to [www.change.org](http://www.change.org) and search for MedShadow or type into your browser: <https://bit.ly/38wJfqA>.

Makena was approved in 2011, under the FDA's accelerated approval pathway—a pathway designated for drugs that meet a significant unmet need. Makena would meet that need if it worked.

An estimated one in 10 babies born in the U.S. is premature, putting them at increased risk of long-term health issues and even death.

The accelerated pathway allowed the drug to enter the market before the completion of phase 3 clinical trials. AMAG agreed to complete the trials after approval. Nearly a decade later, those trials have not shown that this drug prevents preterm birth. Thanks to many voices, including DES Action and all those who signed the petition, the FDA has taken notice.

It's crucial that the FDA actually removes Makena from the market entirely rather than simply changing its indication to reflect that it doesn't prevent preterm birth. If the FDA chooses the latter, doctors can continue to prescribe the drug and patients will continue to be exposed to risks and potential harm they are unaware of. **Even if you signed our last petition, please sign the new one**, and share it with others. Let's insist the FDA stand by its decision to remove Makena. The manufacturer has had 10 years to show it works, and it doesn't.



## Study Finds Increased Risk of Pancreatic Abnormalities in DES Daughters

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pancreatitis often goes away on its own after a few days.

Risk for pancreatic disorders was approximately 11 times greater for DES-exposed participants than those unexposed, and risk for pancreatitis in particular was seven times greater.

These numbers of increased risk sound very high. However, that's partly because of how few total cases of pancreatic disorders existed in the overall study. For example, the range of risk for pancreatic disorders begins as low as 2.6 times higher, suggesting that the actual risk level could be lower than 11 if studied in a larger group of people.

"The higher estimate for any pancreatic disorder could reflect over-reporting by the DES exposed, perhaps due to greater general health concerns, although that seems unlikely," the authors wrote.

"The risk estimates for gallbladder disease, a condition of similar severity, were not elevated, suggesting that general over-reporting by the DES exposed is unlikely."

Acute pancreatitis occurs in 5 to 35 people out of 100,000 each year. Most of these cases result from gallstones or from damage due to alcohol consumption.

### Pancreatic Cancer Findings

A total of 23 pancreatic cancer cases were reported or discovered among all participants: 15 in women and 8 in men. These included eight adenocarcinomas, one invasive islet cell tumor and one acing cell carcinoma, but the researchers were unable to learn what types the others were based on with the data they had.


A history of pancreatic cancer was similar in both groups of women: 2.9% of DES Daughters and 3% of unexposed women. Similarly, in men: 2.4% of DES Sons and 2.6% of unexposed men had a family history of pancreatic cancer.

The risk for pancreatic cancer in

DES Daughters was approximately four times greater than in unexposed women, but again, "estimates were imprecise," the authors wrote, and could still be a result of chance due to the small number of total cases. There were 13 cases of pancreatic cancer in DES Daughters and two cases in unexposed women.

Even so, the increased risk remained even after the authors adjusted the calculations to account for age, BMI, smoking and alcohol consumption.

In men, there were three cases of pancreatic cancer in DES Sons and five cases in the unexposed men.

It is difficult to say whether DES could be a factor directly contributing to pancreatic cancer. The researchers speculated that birth defects in the pancreas as a result of prenatal DES exposure are one possibility, but were not able to study this directly. If that is the case, it would require additional evidence and does not appear to involve gallbladder disease or type 2 diabetes, the authors concluded. 

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## Does DES Cause Low Testosterone?

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this. (Having low testosterone can lead to low sperm count, but simply having a low sperm count doesn't necessarily mean someone has low testosterone. There are other things that could cause low sperm count or semen abnormalities.)

### Limited Studies

The best research we have for looking specifically at testosterone levels and DES exposure is in animal studies, mostly in rodents. A variety of studies in the late 1990s and early 2000s found that high doses of DES given to newborn rats lead to a wide range of reproductive development abnormalities.

Among the parts of the male reproductive system affected were the vas deferens (the duct that carries sperm from the testicle to

the urethra), the seminal vesicles (glands that help produce semen), the prostate, a network of tubules within the testicles, and the epididymis (a duct that carries sperm from the testicles to the vas deferens). But testosterone production may have been affected too.

### Estrogen vs. Androgens


High doses of DES also led to suppression of androgen receptors, proteins in reproductive tissue that allow the body to respond appropriately to testosterone. It appeared in those studies that the abnormalities were caused primarily by an imbalance between estrogens and androgens (male hormones).

A study in 2003 tested that hypothesis by looking at what happened when newborn rats received a dose of testosterone and a dose of DES between two and 12 days after

birth. The addition of testosterone prevented nearly all the abnormalities that had been seen with giving DES alone in previous studies.

### Large DES Doses as a Factor

That study established that the problem is the imbalance between estrogen and androgen in male newborn rats that causes problems—and receiving a large dose of DES is enough to cause that imbalance on its own.

However, that study focused on newborn rats, not rats in the womb, and it aimed to understand how to prevent reproductive abnormalities. It suggests that being given DES soon after birth can reduce testosterone levels, and it's possible the same occurs with prenatal DES. Unfortunately, though, we don't have the studies to say that's happening for sure. 

# We Asked, You Answered

## We wanted your thoughts on how DES Action USA is working for you and how we can improve

Last summer, we launched a survey of members and donors to take a look at how we are doing.

The responses were thoughtful, and while they reinforced our approach, they also gave us ideas of areas to explore in the future.

Some comments were practical. Members suggested topics we can pursue in future issues of VOICE and on the website.

Some answers were strategic for us. Responding to a question about issues of import to members:

- 90% of respondents chose DES Daughters as they age.
- 68% are also interested in DES Grandchildren and how DES affects them.
- 20% chose DES Sons as an area of interest.
- 16% chose LGBTQ+ issues and DES.
- 63% are interested in learning more about endocrine disruptors like DES.
- 26% expressed an interest in DES being used for other reasons than pregnancy: tall girls, morning-after pill, etc.

And some answers were emotional. When we asked why you were a member or donor, a number of you took the time to add comments:

“I was diagnosed when I was 19 in 1975. I needed information. I have gotten it. Thank you.”

“I have been able to get involved in projects such as the CDC DES Men’s Information Packet for Doctors that we reviewed around 2000–2001.”

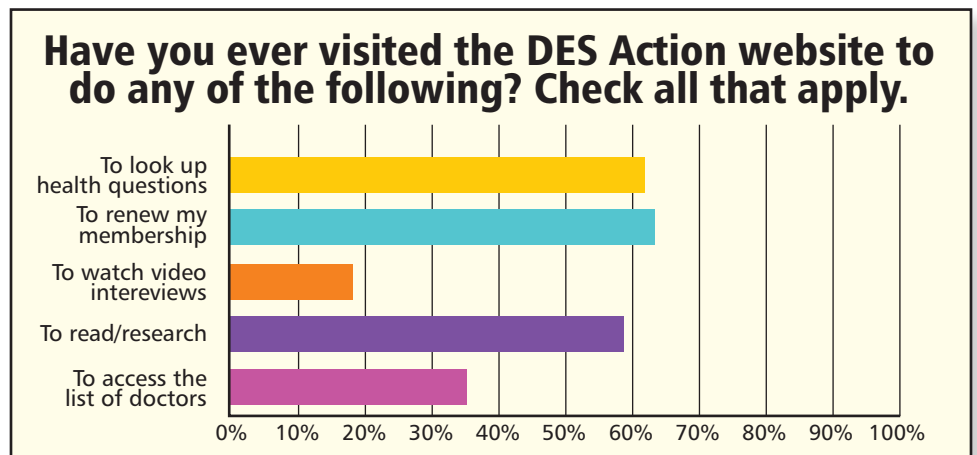
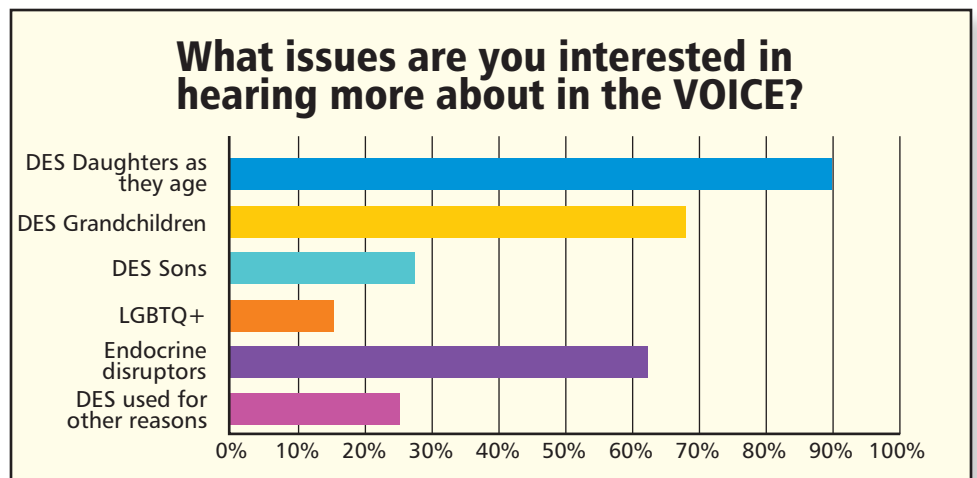
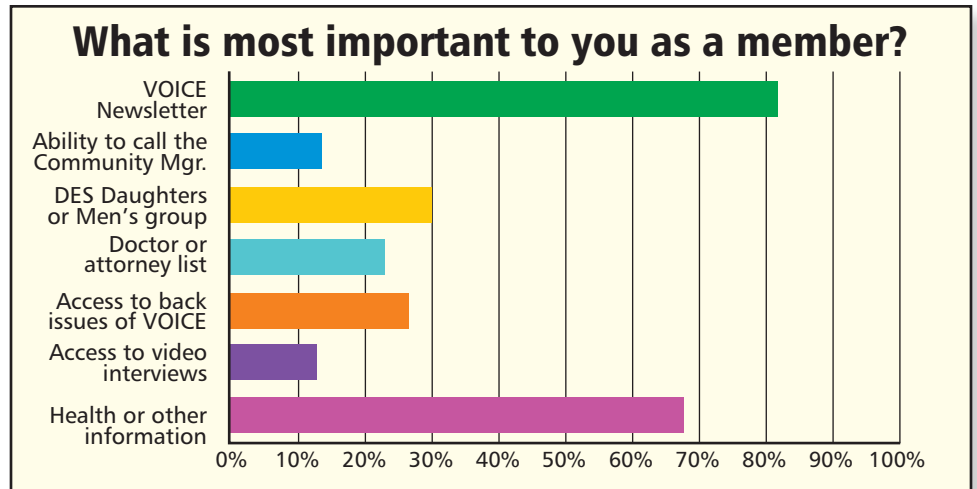
“My mother used DES and I have birth defect.”

“I am a DES Daughter. I also have a daughter. I never knew [about DES] until I was almost 60. My mother never told me while she

was alive. I’ve had health problems my entire life. I got so much info and support. I’m grateful for the info. It helps my Dr.’s as well.”

“Really appreciate the height-

ened awareness, excellent info, kindness, and sensitivity provided by DES Action for all who turn to you. An outstanding support system. Thank you!!!”



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ever to renew your  
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## Early CCA Patient Remembered



Barbara Quammen

*We received this letter from Barbara Quammen's husband Dave and daughter Heather. They gave us permission to share it with you.*

Barbara has passed away (August 1st, 2020, 9:35 a.m.)

In December 1971, Barb was diagnosed with clear cell adenocarcinoma that started a 49-year battle with this unforgiving illness. She was the 11th person in the U.S. to have the DES syndrome.

Many surgeries, doctor visits, hospital stays and thousands of dollars later, Barb has found peace.

Although the DES Action VOICE has been a helpful source of information, we have also found

some of the stories (on patient lawsuits) frustrating. Not all patients have received a settlement, much less millions.

We talked to people, wrote to people explaining the dilemma we were facing. Barb's mother took a form of DES in 1946 to avoid miscarriage. However, the doctor has passed away and the records were destroyed. End of the road!

We wish to continue to receive the DES VOICE and other information as the research is very helpful to our family.

Thank you,  
Dave and Heather Quammen

P.S. Enclosed is a check in memory of Barbara Quammen.