

# MORE ON THE MAYO CLINIC STUDY

Joan L. Headley, Executive Director, Post-Polio Health International

PHI (Post-Polio Health International) publish an article by anesthesiologist and polio survivor Selma H. Calmes, M.D., in *Post-Polio Health* (Vol. 32, No. 3). Dr. Calmes is retired from Olive View/UCLA Medical Center, Sylmar, California, and has written extensively about anesthesiology and has generously advised health professionals and polio survivors over the last decades.

The article, "Important New Paper Published on Anesthesia and Polio" reported on the first scientific study of polio patients having anesthesia for major surgery.<sup>1</sup> The study was done at the Mayo Clinic and compared each post-polio (PP) patient to control patients of the same age with the same severity of pre-operative illnesses and having similar surgery.<sup>1</sup> (if you misplaced it, Dr. Thomas article in *Post-Polio Health* is online at [www.post-polio.org/edu/pphnews/.](http://www.post-polio.org/edu/pphnews/))

PHI received a few comments from polio survivors asking about the article essentially saying that it was much more positive than expected; a few people found the article confusing.

It is true the results of the study regarding anesthesia and the polio survivors in the study found no difference between the post-polio survivors and controls.

Consequently, we asked Dr. Calmes to write another article to address the major concern of those contacting us – *fear of oversedation*. The article, "More on the Mayo Clinic Study of Anesthesia in Post-polio Patients," is posted online at [www.polioplacelive.org/living-with-polio/more-mayo-clinic-study](http://www.polioplacelive.org/living-with-polio/more-mayo-clinic-study).

In the article, she discusses the evidence to see if the fear of over-sedation is justified and the need for peer-reviewed research versus anecdotes, i.e., individual polio survivor stories. (I vividly remember the well-known Jacqueline Perry, M.D., saying at an early con-

ference, "Our study shows 75% of polio survivors were experiencing pain." There was a grown from the audience. She noticed and followed with, "BUT remember 25% were not.")

Calmes mentions other things that can affect a person's reaction to anesthesia. These include age, how much they weigh, other drugs that patients might take (some post-polio patients taking narcotic drugs for pain and these add to the effects of anesthesia drugs), how well their liver works (many anesthesia drugs are broken down in the liver) and genetics.

The article talks about the fact that the issue of the non-effectiveness of drugs to reverse the effect of muscle relaxants is become a big issue and anesthesia practice in the last few years. It is not just post-polio patients who may have issues.

And, based on her experiences of talking to many survivors facing surgery, and her long experience as a practicing anesthesiologist (including attending too many polio patients), she expands on how anesthesiology has changed since the operations that many had during the epidemics. Her comments are reassuring.

So, yes, the study results were "positive" as her past articles have been. However, she and I would make this very important point: Respiratory failure is the greatest known risk for post-polio patients, especially for those who had bulbar and high-spinal polio. That is a significant concern. Pre-planning and selecting the right facility is a must for them.

Are we splitting hairs? Maybe, but we are hopeful that the days of polio survivors NOT choosing surgery out of fear of oversedation for a cancerous tumor or other situations that are life-threatening are over.

<sup>1</sup> Van Alstine LW, Gunn PW, Schroeder DR, Hanson BS, Sorenson EJ and Martin DP. In the seizure and poliomyelitis: a matched cohort study. *Anesthesia and Analgesia*. 2016; 122:189401900

# PRESIDENT'S LETTER

APRIL–MAY–JUNE, 2017

*Spring is here!* The birds are singing and the hummingbirds are finding their feeders, and everything is in bloom! It is “awesome!” as one of my grandsons would say. It is time to get outdoors and get that vitamin D! Now is the time to start working in your garden; enjoy nature! (Just don't get carried away and over do-it!)

It doesn't seem possible, but May 6th will be the 27th year since the North Central Florida Post-Polio Support Group was founded in Carolyn and Jerry's living room with only 15 people seeking help with their mysterious problems that they soon learned was called “Post-Polio Syndrome”. One of our first missions to be established was to educate survivor and their families as well as the healthcare community and physicians and therapists about polio and its after effects, Post-Polio Syndrome. We have accomplished that through years of conferences, workshops, educational programs, our monthly meetings and our *Polio Post News* newsletter that travels world-wide through our website at PostPolioSupport.com. All our work is all volunteer, we do not require dues and our only support comes from our members and with the help of our friends at the March of Dimes. We thank all of you! We thank you, Steve McMahan, for designing our website and laying out our Polio Post News newsletter for most of our 27 years. Steve volunteers his services and he is not a polio survivor. He does it from his heart. We give you a very special “THANK YOU!”

We will celebrate our successful 27 years on the 6th of May 2017 with a luncheon on that same date. Please read the invitation in this newsletter. Be sure to RSVP.

The term ‘Post-Polio Syndrome, (the fourth strand of polio). was coined during the first International Post-Polio Conference held at Warm Springs, Georgia, in May of 1984. It was on Sunday, the day after the conference, when Jerry and I stopped at Warm Springs, that Betty Baxter informed me that support groups must be formed to get the word out to survivors and doctors as to what was happening to survivors, and would I please start the first one in Miami. The beginning for me was just as simple as that! I did agree af-

ter a week or so later to start the one in Miami and a few years later, in 1990 as we moved to Dunnellon, Florida, and at the suggestion of Dr. Burton W. Marsh, the North Central Florida Post-Polio Support Group was born.

Our January, February and March programs were outstanding. In January, we all enjoyed “Finding Solutions” as Deputy Paul Bloom with crime prevention in Marion County made us aware of being alert at all times for our safety at home and away from home. Then Patricia Stafanski made us aware of our county's “Special Needs” program and how each of us must “Get A Plan” and be prepared in case of a disaster. Please read our January Summary.

If you live in the state of Florida, hurricanes are a fact of life, they begin in June and continue through the

(Continued on page 4)



## COMING PROGRAMS



\* \* \*

SUNDAY, APRIL 9TH - 2:00PM

### “HOW ARE YOU SLEEPING”

Speaker: Calvin Cook

\* \* \*

SATURDAY, MAY 6TH — 12 NOON

### MEETING FOR LUNCH

at  
Pavarotti Pizza & Restaurant  
(RSVP by Noon, May 2nd)

\* \* \*

June - July - August

### Summer Vacation

(No newsletter until September)



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Membership to the North Central Florida Post-Polio Support Group is open to all. We are dedicated to supporting polio survivors, families, physicians, health professionals, and all others interested in polio. Our support group has no obligatory fees, but we ask that anyone who is able to make an annual contribution do so. Please make checks payable to the North Central Florida Post-Polio Support Group, and mail to our group at 7180 SW 182nd Court, Dunnellon, FL 34432, ATTN: Treasurer. Donations are used toward our group's expenses. To each one of you sending in a donation we offer a heartfelt "Thank You!"

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### Summary of the January, 2017, Program

#### **"Are You Safe"**

Speaker:  
 Deputy Paul Bloom  
 Marion County Sheriff's Department  
 Crime Prevention Unit

Crime has three parts:

- Ability
- Desire
- Opportunity

We can only have an effect on opportunity by being aware of our surroundings and taking some safety steps. For example, lock your car to prevent theft. If you see something unusual or something that just gives you a bad feeling call the Sheriff's Department.

Never give out personal information over the phone or by email. There are many phone scams going around that you must be aware of. Some callers may say they are from the IRS or law enforcement. They can make it look legitimate on the caller ID but those types of agencies will never call you. There are also many scams that come by email that may look real but never click on a link of give out any personal information. If you get an email from your bank that looks real, never answer it. Call you bank or visit the branch to see if it is from your bank.

Most home invasions are drug related. Someone planning a home invasion may call you to see if you are at home or away. Let them know that you are home as they hardly ever break into a home unless they think that no one is there. Do not answer your door if you do not know who it is, but tell them to go away through a closed door so they know you are home. If they persist tell them you

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### Summary of the March, 2017, Program

#### **"Healty Shoes-Happy Feet"**

Speaker:  
 Giuseppe Lombardo  
 Lombardo Comfort Shoes  
 352-854-2292

Established in 1955, Lombardo Comfort Shoes is not only a shoe store and a shoe repair shop but also a medical supply company. They can help you with all your special needs and insurance questions. They have a full line of medical supplies and equipment which are considered Medicare chargeable items.

Giuseppe brought a wonderful display of shoes and accessories of all kinds. He explained that it is very important to have your feet measured by a professional and to be properly fitted because all shoes are not sized the same.

Lombardo's carries all types of different shoes for all feet problems. Wearing the proper shoes that fit correctly can help with many issues, such as leg, knee, hip and back pain. They can also fit you for prescription or over the counter orthotics. They can also fit you for custom made shoes or perhaps lifts for shoes as needed. If specialty custom built shoes are required have your physician write a letter of medical necessity for insurance purposes.

He explained that it is important not to wear the same shoes all the time but to alternate pairs. He also said that there are many products available for the care of shoes such as polish and treat-

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(“PRESIDENT’S LETTER”—Cont’d from page 2)

end of November. Please don’t panic, but be family and weather ready by planning NOW! The more prepared we are, the safer we will be during a natural disaster.

Dr. Rachelle Studer-Bymes invited 20 members from our North Central Florida Post-Polio Support Group to be guest instructors in the University of Florida Department of Physical Therapy neuro-rehab course in Gainesville. After the two sessions were over, the students helped by serving a wonderful lunch and joined us to visit on a more personal level. Eva Miller, wife of TC Miller, spoiled us again with her famous Congo Bars she bakes for us each year! Thank you, Dr. Rachelle-Studer-Brymes, Students, Eva Miller and the Survivors that participated.

Our program with Giuseppe Lombardo, St.Cped, was well attended in spite of Springing Forward with the time change. He gave us a lot of new information. Sorry if you missed it but, be sure and read Jane’s summary.

I want to remind you again If you are thinking, “*This month’s program doesn’t apply to me, and I think I will skip it,*” chances are that’s the program you’re going to need a few months or even a year later down the road. We all need to be prepared ahead of time; then it won’t be such a shock. Some things you can’t change, but we can all learn new ways of thinking and developing a positive mindset and, consequently, live a healthier life. Try to make all the programs we plan for you a priority!

We welcomed new members Larry and Charlene Thompson from Altamonte Springs, Florida, Esther Pierce niece Linda Owen, Gay Doherty, friend of Mitch and Peg Shaw and Harold Harris, Carolyn’s cousin and wife Diane Harris from Danville, Virginia. We look forward to becoming better acquainted with each of you. We all enjoyed refreshments provided by Mitch and Peg Shaw and Ellen Wilson. Thank you, Peggy Howell, a good friend of mine, for volunteering to type articles for this quarter’s newsletter. We all thank you guys. If anyone would like to volunteer to bring refreshments in the future please call Hila at 352-854-9571.

Let us all remember our Mothers in May and our Fathers in June. They were so very special, for us polio survivors, as they were not only our moms and dads

but they became our selfless therapists. They not only taught us how to live but they guided us by example. Now many of us are not only mothers and fathers, but grandmothers and grandfathers and great grandparents. We wish each of you a very Happy Mothers’ and Fathers’ day!

I was reading in the AARP bulletin (March, 2016) about being aware of heartburn drugs linked to kidney problems. The most popular heartburn drugs called proton pump inhibitors (PPIs) including such brands as Nexium and Prilosec, may increase the risk of kidney disease by 20 to 50 percent, according to a new study published in JAMA Internal Medicine. Researchers followed nearly 10,500 PPI users for an average 14 years comparing them with those of heartburn drugs called H2 receptor antagonists—such as Zantac and Pepcid. The use of PPI drugs was independently associated with a much higher risk of chronic kidney disease, while the H2 drugs were not. The study doesn’t prove PPIs cause kidney disease, but experts warned that people should first try other measures to alleviate heartburn. Please check with your doctor.

I leave you with this last incentive to not use your cell phones at meals; the first person who reaches for their phone must do the dishes.

I look forward to seeing all of you at our next meeting on April 9<sup>th</sup>, 2017 as Calvin Cook speaks to us about the importance of sleep.

Your President,



(“MORE ON MAYO”—Cont’d from page 1)

Members who do not have access to the Internet may call us at 314-534-04754 a copy of Dr. Calmes’ article.

Post-Polio Health International has posted several articles and advice from Dr. Calmes on [www.post-polio.org](http://www.post-polio.org) at [www.post-polio.org/edu/majtop.html](http://www.post-polio.org/edu/majtop.html)



visit our website  
**PostPolioSupport.com**

## Important New Paper Published on Anesthesia and Polio

Selma H. Calmes, MD (retired), Olive View/UCLA Medical Center, Sylmar, California

A scientific paper, “Anesthesia and Poliomyelitis: A Matched Cohort Study” and my accompanying editorial “Why a Paper on Polio and Anesthesia in 2016?”



Selma H. Calmes, MD

Appear in a prominent specialty journal, *Anesthesia and Analgesia*, in June 2016. The study was done by the departments of anesthesiology, neurology and biostatistics at one of America’s most important medical institutions, the Mayo Clinic in Rochester, Minnesota.

Previous articles on polio and anesthesia in the medical literature (the place modern physicians get up-to-date and accurate information about caring for patients) have been reports of a single case of anesthesia in one post-polio patient, and there were no comparisons to patients of the same age with the same other diseases that might affect anesthesia outcome (such as heart disease) and who were having the same operations (difficult operations of increased risks for all patients). Modern medicine demand such comparisons and also demands a careful statistical analysis and study data, for accuracy and validity. Such studies are difficult to do, and no similar study on polio and anesthesia have been attempted previously.

Information on anesthesia in post-polio patients currently circulating in the post-polio community was not developed from such studies and so is not scientifically valid. So, this paper in its editorial, which advocates for more research in this area, are important steps forward, even though the study is not considered perfect because of the low number of polio survivors.

The study reports on 100 post-polio patients having major surgery at Mayo Clinic from 2005-2009 who were identified in the Mayo Clinic’s electronic medical record system. Each post-polio patient was matched with two non-polio patients of the same sex and age and with the same severity of preoperative illnesses (such as heart disease), also having the same surgical procedure. All patients’ records were then reviewed by the authors, looking at other possible var-

iables and also examining the operative, anesthetic and postoperative courses for complications.

Operation types were general surgery (39%), urology (25%) and vascular (21%). All but one post-polio patient had general anesthesia. No differences were found between post-polio patients and control patients in the following: intraoperative events (both anesthetic and surgical), pain scores (how much pain patients have after surgery), how long patients spent in a recovery room waking up from anesthesia, whether they needed to be admitted to an intensive care unit (ICU) for more specialized care postoperatively, how long they stayed in an ICU, and when the breathing tube used during anesthesia could be removed. 30-day mortality was not significantly different between groups.

This study did have statistical issues, identified during the pre-publication review process. Of the 100 post-polio patients, only 36% had residual neurologic damage from polio and only one of these had polio-related respiratory failure. That patient use supplemental oxygen during the day and BiPAP with oxygen at night.

Reviewers of the paper felt that the number of severely affected polio patients was too small to statistically document significance, and some criticize the statistical methods used. The low number of post-polio patients was thought to be because polio patients may have moved away from Minnesota to a warmer climate as the aged.

Although this study can be criticized on these items, its structure (2:1 matched controls) and the measures of medical care studied (common things that can go wrong) give hope to post-polio survivors that, even if they are very ill, they can undergo modern anesthesia and have the same outcomes as non—polio patients.

A word of caution, however: there is a great variability of quality of care and America’s hospitals. The Mayo Clinic represents the very best quality, and whether the study can be applied to all hospitals is questionable.

Finally, the study is important as an example of how to get information on how post-polio patients *really* do during anesthesia, compared to similar patients. More such studies are needed, but this one is hopeful.

*("IMPORTANT NEW PAPER"—Cont'd from page 5)*

Post-polio patients can relax a little about coming for anesthesia and surgery but need to be sure they have surgery on anesthesia at a quality hospital. Check the hospital out on your state governments hospital certifying organization's website [www.jointcommission.org](http://www.jointcommission.org) before agreeing to an operation.

And, post-polio patients should avoid having anesthesia in free-standing outpatient surgery centers (once not physically located in a hospital) and doctor's offices. These are locations with little assurance of high-quality surgical and anesthesia care post-polio patients deserve and need.

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*("JANUARY SUMMARY"—Cont'd from page 3)*

are calling 911 and do so. You may also purchase something called a Video Doorbell at the hardware store. When your bell rings you can see who it is on your phone and talk to them without opening the door.

Be aware of unusual activity in your neighborhood and report it. There is a website called [www.nextdoor.com](http://www.nextdoor.com) where you can keep in touch with your neighbors. This can be helpful to check on anything that might seem suspicious. Let your neighbors know if you are going away so they can report anything out of the ordinary. Be sure to tell them of any cars etc. that should be there. Also call the Sheriff's Department and let them know that you are going to be away.

It all comes down to personal awareness. If you are unsure of anything it is always better to call law enforcement-better safe than sorry. If it is not urgent there is a non-emergency number you can call in Marion County. It is [352]732-9111. If it is urgent do not hesitate to call 911.

There is a facebook page you can 'like' so that you can get the latest information from the Sheriff's Department. Just search for Marion County Florida Sheriff's Department and like the page. Then you will get updates on your news feed.

### **GET A PLAN**

Pat Stefanski, Special Needs Coordinator from the Division of Emergency Management then gave a presentation about how to prepare for emergencies.

The Sheriff's Department has a registry of people with special needs. It is very helpful for them to know who needs special help in case of a hurricane etc. If you want to be added to the list call her at [352]369-8136 or email her at [patefanski@marionso.com](mailto:patefanski@marionso.com). If there is ever a need for evacuation they will contact you to see if you need assistance. You must renew your registration each year but you will receive a reminder card or phone call to do so.

A weather radio is very handy to have and can be purchased at the Sheriff's Department but the supply is limited.

There are three special needs centers. These centers have generators in case of a power outage. You must bring your own bedding and personal care items. You can bring your caregiver with you. Pets are not allowed but Animal Control Services will take your pets to their facility and care for them, then return them to you when you are ready to go home. There is one pet friendly shelter but it is not special needs. There are handicap buses that will pick you up if you need transportation.

It is important that you have a disaster plan in place which includes food and water. Make sure these items are checked for expiration dates each year and if they are out of date be sure to replace them.

We thank both Deputy Bloom and Pat Stefanski for very informative presentations.

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**Submitted by Jane Heady**

*("MARCH SUMMARY"—Cont'd from page 3)*

ments for all types of shoe materials. Good care is important for the life of your shoes.

In addition to custom made shoes Lombardo's can modify your shoes according to your special needs. They can change laced shoes to Velcro; add Velcro extensions to straps that are too tight; put different soles on your shoes etc.

Some shoes have built in chemicals to fight bacteria. But if your shoes have removable insoles you and freeze them to kill bacteria!

Lombardo's also carries a full line of compression stockings of all kinds. Compression hose make sense

*(Continued on page 7)*

("MARCH SUMMARY"—Cont'd from page 6)

for many of us who are sedentary and they also promote healing for many foot and leg problems.

They also carry a full line of braces of all kinds, metal, plastic and other materials.

In conclusion, with the proper shoes and accessories specific to your individual needs foot pain can be diminished and made tolerable.

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Submitted by Jane Heady

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## Vaccination Safety – No Question About It

By Dr. Oz and Dr. Roizen

After we noticed the safety of vaccines here in the U.S. being called into question, we wanted to let you know the facts: Not only is the quality and integrity of your vaccines held to the highest standards, but every year the Centers for Disease Control and Prevention goes to great lengths to provide an easy-to-follow, appropriate vaccine schedule that's as safe as possible for children, adolescents and adults.

Perhaps[s you weren't aware that you're also the beneficiary of a robust National Vaccine Plan that's administered by the office of the secretary of health from Health and Human Services. That has helped greatly to improve vaccine safety over the past three decades.

### Getting a vaccine approved

It all starts with the Food and Drug Administration. No vaccine can be administered unless it's approved by the FDA. That means it goes through extensive and expensive phase I, II and III clinical trials.

Then the Advisory Committee for Immunization Practices, chaired by the director of the CDC, weighs in. The ACIP is an advisory panel made up of 15 voting members (mostly M.D.s), eight ex officio members and 29 liaison organizations.

The ACIP was established in 1964 by the surgeon general to help ensure safety in vaccine manufacturing, not long after Jonas Salk developed the first effective polio vaccine. To become part of the recommended vaccine schedule, the vaccine not only must go through clinical trials, but the developers must subject their vaccine to the lengthy process of data

presentation and review. It can take months or years before an ACIP vote is even considered.

To gain a recommendation, the ACIP requires the use of an explicit, evidence-based format. All meetings are open to the public.

### Protection from adverse reactions

A representative from ACIP also serves as a liaison on the National Vaccine Advisory Committee, which was created in 1987. A division of the Office of Health and Human Services, the NVAC is the federal advisory committee responsible not only for recommending "ways to achieve optimal prevention of human infectious diseases through vaccine development," but also for providing "direction to prevent adverse reactions to vaccines."

The NVAC is made up of 11 members with various degrees, from M.D.s (six) to M.B.A.s and Ph.D.s. Their recommendations go to the National Vaccine Program Office. The NVPO is responsible for "coordinating and ensuring collaboration among the many federal agencies involved in vaccine and immunization activities" to make sure the goal of the National Vaccine Plan - the prevention of infectious diseases through immunizations - is met. The National Vaccine Plan was created in 2010.

Other federal agencies that are involved in making sure your vaccinations meet the highest standards include: the Agency for Healthcare Research and Quality; the Health Resources and Services Administration; the Department of Defense; the U.S. Agency for International Development; the Veterans Health Administration; and the Department of Veterans Affairs. There are many state and local agencies involved, too.

Since the ACIP was established, the number of vaccines included in the recommended child/adolescent immunization schedule (for birth through 18 years) has increased from six to 16. Only one vaccine was removed from the schedule, and that was in 1972, when smallpox was declared eradicated.

If you still have doubts about the safety of vaccines, we hope this will put them to rest: We (Drs. Roizen and Oz) spent a month reviewing every study on vaccine safety and interviewing 150 experts on all sides of the issue. Our conclusions: Vaccines aren't perfectly safe, but the chance that the childhood vaccines

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(“VACCINATION SAFETY”—Cont’d from page 7)

will effectively and safely prevent disease is more than 40,000 times greater than the chance that they will cause any serious side effects. So getting your childhood vaccines is like winning the lottery!

You can see a synopsis of our findings in a chapter in "YOU: Raising Your Child." Read it at [www.doctoroz.com/article/book-excerpt-you-having-baby-vaccines](http://www.doctoroz.com/article/book-excerpt-you-having-baby-vaccines).

- Mehmet Oz, M.D. is host of "The Dr. Oz Show," and Mike Roizen, M.D., is Chief Wellness Officer and Chair of Wellness Institute at Cleveland Clinic.

Ocala Star-Banner - [www.ocala.com](http://www.ocala.com) February 7, 2017

**UF** College of Public Health and Health Professions  
Physical Therapy  
UNIVERSITY of FLORIDA

On February 15, 2017, the University of Florida Department of Physical Therapy hosted the North Central Florida Post-Polio Support Group. The group of 69 Doctoral Physical Therapy students had the opportunity to learn about both Polio and Post-polio from the 15 participating members. It was an enriched learning experience for the students as well as the members! Members have the opportunity to share their stories and experiences and students have the opportunity to practice their skills and send each member home with a personalized home exercise program and recommendations for enhancing your physical community engagement.

We Would like to **THANK YOU**, the Central Florida Post-Polio Support Group, for your dedication to the eradication of polio and willingness to share your passion, time, and wisdom with her students!

## Aging in America

*Games, Crafts,*

*May Safeguard the Aging Brain*

By Lindsey Tanner, The Associated Press

Chicago - Even in your 70s and beyond, simple activities including Web-surfing, playing bridge and socializing can stave off mental decline, new research says.

Benefits were greatest in computer users and in those without a gene variation linked with Alzheimer's disease. But even among seniors with that trait, mental decline that sometimes precedes dementia was less common among those who engage in mind-stimulating activities.

The results don't apply to costly, computer-based games that purport to keep the brain sharp - those were not studied. The benefits were found from activities that many seniors have access to.

"They don't have to spend their life savings" on fancy gadgets, said Dr. Yonas Geda, the study's senior author and a neurologist at the Mayo Clinic's Scottsdale, Arizona, campus.

The study was published Monday in the journal *JAMA Neurology*. The researchers noted that the statistical link they found with reduced risk does not prove the activities were responsible.

Still, said Heather Snyder of the Alzheimer's Association, the results support the idea that "being engaged mentally is good for brain health."

The study looked at five types of activities that are thought to help keep the mind sharp: computer use; making crafts; playing games including chess or bridge; going to movies or other types of socializing; and reading books. The idea was to see if these activities could help prevent mild cognitive impairment. That condition involves problems with memory, thinking and attention that don't interfere much with daily life but which increase risks for developing Alzheimer's disease and other types of dementia.

Almost 2,000 adults aged 70 to 93 without any memory problems participated. They lived in Minnesota's Olmsted County, where the Mayo Clinic in Rochester is located. They were asked we

whether they had engaged in any of the five activities during the previous year and if so, how often. They were tested for the condition in mental exams at the beginning and every 15 months for about four years. During that time, 456 study participants developed the mild impairment.

Analysis found a protective effect from each activity except for reading books. Study participants who engaged in any of the other activities at least once weekly were 20 percent to 30 percent less likely to develop the condition over the four years than those who never did those activities.

Ocala Star-Banner - [www.ocala.com](http://www.ocala.com) - Tuesday, January 31, 2017

## FOCUS: Polio Vaccine Creator's Bright Second Act

*After achieving worldwide fame, Jonas Salk built his institute in La Jolla*

By Bradley J. Fikes (July 1, 2016)

So you're a medical researcher who led a team to develop the first safe and effective polio vaccine. Your place in history is assured, what you want to do more.

You moved to a place called San Diego that's known for its military history and salubrious weather, but has little in the way of medical innovation. You establish an eponymous Institute on open space with few other establishments nearby, but with a magnificent view of the Pacific Ocean.

That's the capsule version of how Dr. Jonas Salk established the Salk Institute for Biological Studies. It's just part of the life story of Salk, whose perseverance and tenacity are legendary. For much of the 20<sup>th</sup> century, polio generated enormous fear.

There was no cure, and the best efforts of medical scientist couldn't find a way to prevent it. Polio's unpredictability made it especially worrisome. The disease would kill some and leave some severely or partly paralyzed, perhaps kept alive in "iron lungs" because they couldn't breathe on the road. Others escape totally unscathed.

While at the University of Pittsburgh, Salk Leonard enormous effort to develop a safe and effective vaccine against polio. Aided by powerful allies and contributions from the March of Dimes, that campaign succeeded.

Thanks to the polio vaccines pioneered by Salk and a killed version of the virus, and then in a living but weakened virus developed by his bitter rival, Albert Sabin, polio was nearly extinct.

"The vaccine works. It is safe, effective and potent." Those words about the Salk vaccine, uttered on April 12, 1955 by Dr. Thomas Francis, Jr., director of the University of Michigan's poliomyelitis vaccine evaluation center, electrified the public. They presaged the demise of polio is a public health threat in the United States and elsewhere in the world.

"Freedom from fear" is how Salk himself summed up the effect in a 1993 interview with the *Los Angeles*

*Times*. "That's the most powerful of all emotions. I'll always remember Franklin Roosevelt (a polio survivor) saying, 'There is nothing to fear but fear itself.' I sure learn how important freeing people from fear would be."

Salk was born in New York City in 1914, the son of Russian-Jewish immigrant parents Daniel and Dora Salk. Although they were poorly educated, they respected learning. Dora, called "The capital Duchess" because of her strong personality, impressed upon Jonas the desirability of a good education.

Dealing with her was an education in itself – and how to handle strong-willed people, of whom young Jonas would encounter many.

"My father learn to become a diplomatic, even-tempered person who could deal with conflict without losing his balance," said Peter Salk told the San Diego Union-Tribune in 2014, on the centenary of his father's words. "Those qualities are doing well in life, given the challenges he faced."

Initially attracted to the legal profession, Jonas Salk eventually decided on a career in medicine. At New York University in 1941, Salk's life took a pivotal turn when he met medical researcher Thomas Francis, Jr.

Francis became Salk's mentor and emphasized the good that could be made by conquering infectious diseases. They teamed up to develop an influenza vaccine made from killed virus. The vaccine was created in time to give the troops before World War II ended.

Postwar, Salk joined the University of Pittsburgh, where he performed research in a quest to discover what might be needed to make an effective polio vaccine. Among other things, Salk helped confirm the existence of three strains of the polio virus; any vaccine with need to immunize against all three strains to be effective.

Salk begin clinical trials with humans in 1952, starting with small numbers of children and then scaling up. The trials reached huge proportions in 1954, with 1.8 million people enrolled.

In the years after Francis' dramatic 1955 announcement of the vaccine success, it was widely deployed in polio rates plummeted.

*(Continued on page 10)*

(“FOCUS: JONAS SALK”—Cont’d from page 9)

There was one sour note: Critics accuse Salk of taking too much credit for the work of others, and he never received the highest scientific honors such as the Nobel Prize. Salk declined to respond to the criticism, saying to do so would create negativity.

In the 1960s, the saving live-virus vaccine was introduced. It became the most commonly used polio vaccine because the weakened virus could be passed to others, prompting them to also develop immunity to polio. But in very rare instances, estimated at one case in 2.7 million doses, the vaccine could cause paralysis.

[EDITOR’S NOTE: *The Centers for Disease Control and Prevention (CDC) has since encouraged physicians to opt for the safer Salk vaccine.*]

Having largely conquered polio, Salk took on the project in San Diego. Using 27 acres of land donated 1960 by the city’s voters, Salk and his colleagues launched into establishment of the Institute.

uilding up what became a world-class center for life science and for studying humanity proved to be a Herculean task.

Getting great scientist to join his institute proved fairly easy. Among his star recruits: Francis Crick, Renato Dulbecco, Leo Szilard, Jacques Monod and Warren Weaver, All-Stars in their fields.

Getting funding was a lot harder, and for years it was touch-and-go.

Soaks idea was to recruit great minds from the sciences and humanities to think about humanity and what was best for its future. That kind of interdisciplinary thinking was years ahead of its time, and it didn’t sell at the University of Pittsburgh, where he originally tried to establish it, or at Stanford University.

But by the time Salk died in 1995, the Institute was firmly established. It was a pillar of San Diego – and respected worldwide.

Salk was not only helped by his fame, but by potent allies who steered him to San Diego. One was oceanographer Roger Revelle, who basically invented UC San Diego, the other was Charles C. Dail, San Diego’s mayor and a polio survivor.

Salk also teamed up with legendary architect Lewis I. Kahn, who harbored a similar vision of what the Insti-

tute could become: a place of research and attribute to beauty and the arts.

While the biomedical sciences have eclipsed the arts at the Institute, the dual influence remains in events such as the annual Symphony at Salk Gala.

During the Institute’s development, Salk continued his workaholic, compulsive, insomniac habits.

Salk didn’t have an off switch, one of his sons, Jonathan Salk, told the Union-Tribune in 2014. Another son, Peter, said pretty much the same thing in that story two years ago. They remember a father who wanted to engage them in deep conversations about philosophy instead of letting them go play.

In 1970, Salk made a crucial recruitment that help stabilize the Institute’s finances. He hired as its president Frederic de Hoffman, a nuclear physicist who had worked on the Manhattan Project.

“In Mr. de Hoffman’s tenure as president, the Institute staff grew to more than 500 from 200 and its budget increased from \$33 million annually from \$4.5 million,” according to a 1989 obituary in the New York Times.

Salk was crowded out of managing the Institute by de Hoffman, wrote Suzanne Bourgeois, a Salk professor emerita, in a 2014 biography of the Institute titled “Genesis of the Salk Institute: The Epic of Its Founders.” Bourgeois was no fan of de Hoffman, as she makes clear in her book.

Salk remained a figure of admiration until his passing, a venerable resident of La Jolla who would appear from time to time to market events at the Institute he found it. Most of all, Salk kept on thinking, planning and dreaming, even toward the end when he was dying of heart disease.

“On the notepad from his last day, the entries got fainter and weaker, and finally ended in a line that trailed off toward the edge of the page,” Peter Salk said in the Union-Tribune story in 2014. “He didn’t stop until the very end.”

Source: [HTTP://www.sandiegouniontribune.com/news/2016/jul/01/Jonas-Salk-polio-vaccine-Institute/?fbshare=207-2854](http://www.sandiegouniontribune.com/news/2016/jul/01/Jonas-Salk-polio-vaccine-Institute/?fbshare=207-2854)

## 12 Ways to Think Faster

*Tone up your brain with these simple, proven strategies.*

By Lisa Mulcahy

Wouldn't it be terrific to be able to make great decisions in a snap? You can start thinking faster and more effectively immediately with one step: Get moving. "Starting moderate aerobic exercise, at any age, will absolutely help protect brain health," says Peter J. Snyder, professor of neurology at Brown University in Providence, R.I. "Recent research has convincingly shown us that a regular program (such as fast-paced walking for 30 minutes, three times per week), for just six months, leads to the growth of brain cells and their connections in parts of the brain that are critically important for learning and memory." Feeling inspired? Try these other simple research-proven brain-boosting strategies.

- 1. Don't skimp on D.** The vitamin protects against the neuron loss that can cause cognitive decline, according to a new Duke University-NUS Medical School study. Adults need between 600 and 800 IU (international units) of vitamin D per day.
- 2. Trust your instincts.** The longer you mull over a decision, the more likely you are to choose the wrong option, according to Columbia University researchers. Write down a simple summary of the choices you have to pick from, then list a few pros and cons for each. You should quickly see the right decision; act on it and you'll feel satisfied.
- 3. Speed-read the right way.** Mobile apps aimed at teaching speed-reading techniques are everywhere, but researchers believe most of them don't really help your brain retain written info faster or better. Instead, focus on reading comprehension, which does increase your brain's reading speed over time. To improve your comprehension, choose reading material on a wide variety of topics that interest you.
- 4. Say these words: "I can do better!"** It may sound silly, but research shows that silently repeating this phrase to yourself is very effective when it comes to shoring up your brain's reaction time. World-class athletes use this trick for mental motivation.
- 5. Go for a drive.** Researchers in the UK recently found that the concentration required while motoring down the highway, and specifically while changing lanes, clears your head so effectively you'll think better overall. Try this when you're stuck on a problem.
- 6. Get physical four hours after learning something new.** If you need to memorize that presentation for work, go over the material, then jump on the treadmill a while later. Research from the Netherlands found that a time-delayed exercise session consolidates memories in the hippocampus, the part of our brain that helps us learn quickly and effectively.
- 7. Never stifle a yawn.** The physical mechanism of a good yawn actually cools down your brain, leading to better mental efficiency.
- 8. Pretend you're in Hamilton.** Research from the Dana Foundation, which studies the brain, found that performing musical improvisation exercises or rapping - which requires you to think on your feet moment to moment - improves your thinking speed overall the more you learn and practice this performance skill.
- 9. Crack open a classic.** Researchers have found that good literary fiction improves connectivity and function in our brains and helps strengthen imagination too.
- 10. Think on your feet.** A number of studies from Texas A&M University have shown that working at a standing desk improves our brains' time management, fact reten-

*(Continued on page 12)*

("THINK FASTER"—Cont'd from page 11)

tion and comprehensive skills. The change from sitting to standing while at work or home may break up boredom and refocus our attention in a fresh way.

11. **Chew gum.** Research shows that chewing increases cerebral blood flow enough to help you remember words much faster—handy when you're blanking as you say hello to your new neighbor.

12. **Stay curious.** Push yourself in fresh directions. For example, learn a new language.

"It is never too early or too late to focus on your brain health," says Sandra Bond Chapman, Ph.D., founder and director of the Center for BrainHealth at the University of Texas, Dallas. "The key takeaway for those who haven't been training mentally or physically is to challenge their thinking, and get moving at any age."

Visit [Parade.com/thinkfast](http://Parade.com/thinkfast) for more brain-boosting tricks. February 5, 2017

## Report That Fraud!

Where to file complaints - and what will happen then  
Your Money Scam Alert - By Sid Kirchheimer\*

Guess what the most frequent Google search related to scams is. According to Google, it's simply "How do I report a scam?" The answer, of course, isn't simple.

Fraudsters can't be stopped unless their schemes are reported.

For scams perpetrated by shady contractors and front-door solicitors, contact local police and your state attorney general or district attorney. For other scams, here's a guide to which federal watchdog agency should get your complaints. Depending on your scam, there may be several.

### FEDERAL TRADE COMMISSION

[ftc.gov/complaint](http://ftc.gov/complaint), 877-382-4357

This is the agency for reporting identity theft, abusive debt collectors and most types of fraud. After filing a complaint, you'll get a reference number to use when

contacting the agency for future updates. The FTC received more than 3 million complaints in 2015, and it does not routinely respond back to you or resolve your individual case. Rather, your complaint will be entered into a database that the FTC and some 2,000 civil and criminal enforcement agencies use to track scam patterns and build cases against specific con artists. Fraud complaints should also be filed with your state's attorney general and even local law enforcement authorities.

### NATIONAL DO NOT CALL REGISTRY

[donotcall.gov](http://donotcall.gov), 888-382-1222

For reporting unsolicited sales call. Start by putting your phone number on this registry. Once yours has been there for at least 31 days, you can report unwanted calls. Your information will be pooled with other data to help catch violators. Note that calls from legitimate charities, survey firms, debt collectors and political candidates or parties are not covered by the Do Not Call rules.

### CONSUMER FINANCIAL PROTECTION BUREAU

[consumerfinance.gov/complaint](http://consumerfinance.gov/complaint), 855-411-2372

For complaints about shady business practices and financial products, including loans, bank services, credit reporting, ID theft, debt collection and payment cards. The CFPB forwards complaints to the company, which has 15 days to respond. Cases are supposed to be resolved within 60 days. You can check the status of your case via the CFPB website. For credit cards and bank-issued ATM and debit cards that are used fraudulently, lost or stolen, contact the issuer.

### INTERNET CRIME COMPLAINT CENTER

[ic3.gov/complaint](http://ic3.gov/complaint)

For reporting internet based scams, including online auctions; investment and sales fraud; internet extortion, hacking and phishing; and scam emails. Operated by the FBI, the IC3 forwards complaint information the appropriate law enforcement or regulatory agencies, but does not directly conduct investigations.

### POSTAL INSPECTION SERVICE

[postalinspectors.uspis.gov](http://postalinspectors.uspis.gov), 877-876-2455

To report scams distributed by U.S. mail, such as bogus lottery and sweepstakes 'winnings', chain letter

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("REPORT THAT FRAUD"—Cont'd from page 12)

schemes and deceptive advertisements - as well as mail theft.

Go to [aarp.org/fraudwatchnetwork](http://aarp.org/fraudwatchnetwork) to learn more about identity theft and avoiding scams.

**\*Sid Kirchheimer is the author of Scam-Proof Your Life, published by AARP Books/Sterling.**

## Anesthesia Update: Separating Fact from Fear

Selma Harrison Calmes, MD

### Introduction

This is a brief review of the process of anesthesia care, current anesthesia practice, and how these might relate to post-polio syndrome (PPS) patients having surgery. The goal is to make clear that proper pre-op planning allows post-polio patients to have surgery and anesthesia with a minimum of risk of death from an error while hospitalized. It must be emphasized that it is not necessary for post-polio patients to keep up with drugs and practices in anesthesia. Anesthesia, like every medical specialty, is rapidly changing, as legions of dedicated researchers and clinicians work to make what we do more effective and safer. It is extremely difficult for anesthesiologists to keep up with all the new drugs and practices; patients can not possibly keep up.

We will NOT address pain management, except pain immediately post-op. Research has - and is still - finding numerous, complex mechanisms that cause pain, and pain treatment is becoming more and more complicated. Continued research on pain mechanisms will probably lead to better therapies for PPS patients with pain problems.

### The Risk of Anesthesia

What is the risk for anyone having anesthesia, and how does this compare to other risks in our daily lives? The government's Agency for Healthcare Research and Quality looked at this in 2002: [www.webmm.ahrq.gov/dyarchivecase.aspx?dykID=1](http://www.webmm.ahrq.gov/dyarchivecase.aspx?dykID=1)

It should be clear where the real risk is: just being in the hospital! The risk of dying from anesthesia is much, much smaller. The focus for worry should move from anesthesia to being hospitalized. Fortunately, a nationwide effort to improve hospital safety is developing, but safety still varies markedly by individual hospital.

### Anesthesia Risks for PPS Patients

What do we know about how PPS patients do during anesthesia? Very little! Medical knowledge like this can be measured by looking at the number and type of medical journal publications over time, something easily done on the National Library of Medicine's PubMed data base. (This lists all articles in standard medical journals over time.) Searching for "post polio syndrome AND anesthesia" 11 articles were found. The first was in 1990. Ten more articles were published in the next 12 years. Not all were significantly focused only on PPS. There were three case reports, three letters-to-the-editor on the cases, one was a theoretical article with no cases, one article was on dental issues, one mentioned PPS as part of a larger study of a new drug and one was on

indications for modafinil (Provigil), not about anesthesia. This is a very small amount of information, really only eight articles.

Contrast this meager number of articles with those on PPS itself: 946 articles were published since 1990, when the first article on anesthesia was published! So researchers were focused on the bigger problem of what is PPS and what should therapy be. Additionally, few hospitals have many PPS patients coming in for surgery, so a significant study of anesthesia complications would be very difficult. Fortunately, we will get some real data in the next few years. The Mayo Clinic has had an electronic medical record since 1980, and it is often used to study anesthesia complications. So I convince my anesthesia friends there to study this. The question is, "How many and what type of anesthesia complications occur in PPS patients having anesthesia and how does that compare to other patients with a neuromuscular disease and also how do they compare to normal patients?"

Data gathering is finished and they are half-way through data analysis. They gave me permission to give you some early, preliminary results, as of March 6, 2009. The study covers 1986-2008 and includes all PPS patients having surgery (excludes sedation cases and patients less than 18 years old). There are 779 patients, a very generous sample size, which will make their results very powerful. Data analysis is complete on the first 300/779 patients. No anesthesia complications occurred. It will take another 6+ months to finish the data analysis, write this up and get it published, so we don't get the final results for a while. But, I think this is a most hopeful study, and it supports my clinical impression that if a good pre-op evaluation is done and if surgical, anesthesia and hospital care are competent, PPS patients can have surgery without problems.

PPS patients have asked numerous questions about anesthesia since 1996, when I gave the first talk on this. Many questions have been about normal things that can happen, for example a drop in blood pressure after a spinal anesthetic was placed. This is due to the effect of the spinal anesthetic on nerves controlling blood vessels and is actually not a complication. Well trained anesthesiologists look for these complications and treat them appropriately and promptly. However, some of the most significant "anesthesia complication" questions were actually about complications from surgery and had nothing to do with anesthesia. We have to use great care about what we call "anesthesia complications."

### The Process of Anesthesia Care

Because each patient's anesthesia needs differ, and differ over time as new problems show up, this talk will focus less on specific anesthesia techniques and drugs and more on communicating with the anesthesiologists about your problems. This is an area of confusion, so the usual process is reviewed here.

Most PPS patients will have surgery in a hospital or an out-patients surgery facility attached to a hospital. (For safety reasons PPS patients should not have anesthesia in physician's offices. That situation will not be discussed.) The anesthesia process, essentially the same, varies by elective and emergency surgery.

### Elective Surgery

1. The surgeon and you decide on surgery. You should state your special problems for anesthesia (sleep apnea or whatever). If you have a request for a particular anesthesiologist, tell the surgeon.

2. Surgeon's office calls the hospital's scheduling office and schedules time, date and the operation. The special medical problems related to anesthesia should be stated to the scheduling secretary. If there is an anesthesia request, the office secretary should give the information to the scheduling office. (Many hospitals do this process on the web now.)

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(“ANESTHESIA: FACT FROM FEAR”—Cont’d from page 13)

3. Anesthesia pre-op evaluation varies in different institutions. Many hospitals now run a daily clinic of upcoming surgery patients. This is at the hospital; blood work, EKG and chest X-ray can be done at the same time. You receive an appointment, usually from the pre-op clinic's scheduling office. These clinics are often staffed by specially trained nurses, who follow protocol. Anesthesia residents are also used. AN anesthesiologist is always available to the nurse/resident, who would call him/her for complicated patients. The anesthesiologist might suggest special tests or even come to the clinic to examine you. The data on each patient is recorded and reviewed at the end of the day to see if anything is missing. These forms are passed along to the scheduled anesthesiologist, usually the night before. If there is no pre-op clinic, trained nurses will usually call before surgery to check on your medical history and medications. The answers to those questions are given to an anesthesiologist.

Often you don't physically see the anesthesiologist until the day of your surgery. If you problems are very difficult, for example, if you need assisted ventilation, appointments can be made well ahead of time for the Anesthesia Pre-op Clinic or to see an anesthesiologist. The surgeon's office would facilitate that. Patients with these difficult problems should get evaluations by your pulmonary and post polio physicians before that pre-op clinic visit, and you should come with all those records (a pulmonary function test, at least!), so the anesthesiologist has maximum information about you. Be sure you are well-organized and precise when you speak with them (“I've had polio and need or have--- whatever.”); they are usually extremely busy and pressed for time.

4. Hospital operation rooms are chaotic and always in flux due to the emergencies incoming at all hours and also problems possibly occurring in the schedule operations. As a result, anesthesia staffing is always in flux. The department should do their best to get you your desired staff, but there are times when it just isn't possible. In that case, all the pre-op information is passed along to the new physician, who should have all the needed information on you.

5. After surgery, you should get a visit from an anesthesia person, usually a specially-trained nurse or anesthesia resident. They should ask about your anesthesia experience and if you note any possible complications on the first post-op day. Be frank in your responses. They need to know what YOU experienced. This information is typically put into a database so the department can see how they are doing and compare themselves to national figures.

### Emergency Surgery

In true emergency such as a car accident, there is little choice of hospital or anesthesiologist. The Emergency Room physician will assess you and decide how urgent surgery is. There may be time for your own physician to get involved. The anesthesiologist will talk with you, often in the OR.

You can help by having a medical alert bracelet or some other way to identify your health problems and needs. Because of the wide recognition of the MeidcAlert program, that is probably the best use. Also, your companions or spouse should be aware of your needs. Simple wallet cards can provide them with the needed information. This could save your life! It's also helpful to know which are the best hospitals in your geographic area and discuss this with your companions or spouse.

### Types of Anesthesia

“What kind of anesthesia is best?” is the question I'm asked most often. The answer is “It depends.” It depends on your own health problems, including ones from age-related diseases as well as from polio. It also depends on your wishes and your past experience with anesthesia. It depends on the operation that's planned. Some operations require certain types of anesthesia. It also depends on your surgeon. Some surgeons, for example, just can't operate under local anesthesia. So anesthesiologists

may be particularly skilled in a certain technique, so it can also depend on them.

This “depends” call for discussion as each individual patient comes for each particular operation and at that point in time. After evaluating all these “depends” we can come up with and “Anesthesia Plan.” All anesthesia plans should include something for pain relieve in the post-op period.

### There are three categories of anesthesia:

1. General anesthesia: You are completely asleep. You receive intravenous drugs and also gasses to breathe, by way of a mask or breathing tube.
2. Regional anesthesia: Only the part of the body being operated on is anesthetized, using local anesthesia injected at the site of the surgery, near a major nerve(s) to that area or around or near the spinal cord. The most common types are spinal anesthesia (local anesthesia given into the fluid around the spinal cord) and epidural anesthesia (local anesthesia given in the space just before the spinal cord's covering, usually through a small catheter). Regional anesthesia is increasingly popular because pain is actually prevented.
3. Monitored Anesthesia Care (MAC): The surgeon injects local anesthesia at the surgical site; an anesthesiologist sedates, monitors and makes sure you are comfortable and safe.

Many operations need a certain kind of anesthesia. Common operation and usual anesthetics are as follow:

Cholecystectomy (removal of the gall bladder, usually done laparoscopically, using a telescope-like instrument inserted into the abdomen through small incisions): this needs general anesthesia because the abdomen is very distended during the operation.

Cataract removal: MAC. The ophthalmologist/anesthesiologist does a nerve block behind the eyeball, anesthesiologist gives sedation so you hold still and are comfortable.

Carpal tunnel release: MAC, usually. Usually done with local injection by the surgeon at the wrist, with sedation added. Can be done with various nerve blocks of arm or general anesthesia.

Orthopedic operations: General/regional, depending on the operation and the surgeon

Rectal surgery (hemorrhoidectomy, anal fistula): regional anesthesia has many benefits and is indicated. Sedation can be added.

Urologic surgery (resect the prostate, kidney stone removal): Simple trans-urethral resection of prostate (TURP) is best done with a regional anesthesia for numerous reasons. Radical prostatectomy calls for general anesthesia because the operation is more extensive and longer. Kidney stone removals are usually done with general anesthesia due to the severe pain.

It is not unusual to combine types of anesthesia: to add sedation to regional cases (to improve patient comfort while lying on the hard OR table), or to do a regional technique and then put the patient to sleep; the regional will be in place at the end of the case to give long-term post-op pain relief. Mixed techniques get the benefits of each.

These recommendations may change in the future. Surgical techniques are changing very rapidly and will lead to less invasive surgery. You may have read about robotic surgery, currently used in prostatic, neurosurgical, cardiac and gynecological operations. You might also have learned about endoscopic surgery. There are some simple ones already, such as laparoscopic cholecystectomy. Soon, we'll have major operations on the GI tract, one via an endoscope passed through the mouth,

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("ANESTHESIA: FACT FROM FEAR"—Cont'd from page 14)

and they'll remove your stomach! Or, they will go through the rectum and remove your colon!

We can also note how anesthesia is advancing. People have very different Responses to many drugs, and this can be predicted now for some drugs, based on genetic studies. In the near future, we will be able to predict, ahead of surgery how you would respond to certain anesthesia drugs, based on your genetic profile. So we could tailor an anesthetic to each individual patient. I hope you get the sense of how dynamic the practice of medicine is and how rapidly it's changing.

### Anesthesia Specifics for PPS

In the absence of any significant published information, the following is based on my clinical experience and ideas developed after extensive study of polio and PPS. As more information becomes available these findings will change.

### Anesthesia Issues for Post-Polio Patients

1. Post-polio patients are nearly always very sensitive to sedative meds, and emergence can be prolonged. This is probably due to central neuronal changes from the original disease, especially in the Reticular Activating System.

2. Non-depolarizing muscle relaxants cause a greater degree of block for a longer period of time in post-polio patients. The current recommendation is to start with half the usual dose of whatever you're using, adding more as needed. This is because the polio virus actually lived at the neuromuscular junctions during the original disease, and there are extensive anatomic changes there, even in seemingly normal muscles, which make for greater sensitivity to relaxants. Also, many patients have a significant decrease in total muscle mass. Neuromuscular monitoring, intra-op helps prevent overdose of muscle relaxants. Overdose has been a frequent problem.

3. Succinylcholine often causes severe, generalized muscle pain post-op. It's useful if this can be avoided if possible.

4. Post-op pain is often a significant issue. The anatomic changes from the original disease can affect pain pathways due to "spill-over" of the inflammatory response. Spinal cord "wind-up" of pain signals seem to occur. Proactive, multi-modal post-op pain control (local anesthesia at the incision plus patient-controlled analgesia, etc.) helps.

5. The autonomic nervous system is often dysfunctional, again due to anatomic changes from the original disease (the inflammation and scarring in the anterior horn "spills over" to the intermediolateral column, where sympathetic nerves travel). This can cause gastro-esophageal reflux, tachyarrhythmia and, sometimes, difficulty maintaining blood pressure when anesthetics are given.

6. Patients that use ventilators often have worsening of ventilator function post-op, and some patients who did not need ventilation have had to go onto a ventilator (including long-term use) post-op. It's useful to get at least a vital capacity (VC) pre-op, and full pulmonary function studies may be helpful. Persons that should all have pre-op pulmonary function tests are those who were in iron lungs. The marker for real difficulty is thought to be a VC less than one liter. Such a patient needs good pulmonary preparation pre-op and a plan for post-op ventilatory support. Another ventilation risk is obstructive sleep apnea in the post-op period. Many post-polio patients are turning out to have significant sleep apnea due to new weakness in their upper airway muscles as they age.

Post-op reparatory failure in these patients can be difficult to manage. The patient's pulmonary physician could help by doing a pre-op evaluation and being involved in post-op ventilatory management. This situation might call for the resources of an ICU in a major medical center.

7. Laryngeal and swallowing problems due to muscle weakness are being recognized more often. Many patients have at least one paralyzed cord, and several cases of bilateral cord paralysis have occurred post-op, after intubation or upper extremity blocks. ENT (Ear, Nose and Throat) evaluation of the upper airway in suspicious patients would be useful.

8. Positioning can be difficult due to body asymmetry. Affected limbs are osteopenic and can be easily fractured during positioning for surgery. There seems to be greater risk for peripheral nerve damage (includes brachial plexus) during long cases, probably because nerves are not normal and also because peripheral nerves may be unprotected by the usual muscle mass or tendons.

### New Ideas/Thought

Spinals: Recent studies demonstrating the presence of cytokines in the central nervous system of PPS patients lead me to be less enthusiastic about using spinal/epidural anesthesia. There is no data on this situation, and there are so many benefits to this regional anesthesia, and they might be suitable in situations. Lidocaine would not be a suitable drug choice for PPS patients.

Regional anesthesia: Should the peripheral nerves of PPS patients be exposed to local anesthetics, especially for long period post-op? There is no data, but many PPS patients have atrophied peripheral nerves. Perhaps smaller doses of local anesthetics and avoiding continuous post-op infusions would be safer.

Above-the-clavicle blocks (supraclavicular and interscalene): These have a high risk for diaphragmatic paralysis and should probably not be used in PPS patients, unless the patient can tolerate a 30 percent decrease in pulmonary function.

### Conclusion

The specialty of anesthesiology has been the leading advocate for patient safety by sophisticated monitoring by analyzing data, better education, etc. Anesthesiology today is extremely safe. Careful evaluation and planning need to be emphasized. If the anesthesiologist assesses the patient correctly and plans correctly, and if the patient is in the best possible physical shape pre-operatively, there is not often a problem with anesthesia for polio survivors.

**This report was given at Post-Polio Health International's 10th International Conference, "Living with Polio in the 21st Century at RWSIR" (April 2009).**

**Selma Harrison Calmes is a Retired Clinical Professor of Anesthesiology, UCLA School of Medicine, Sylmar, California.**

**Regarding the Mayo Clinic Data Compilation Project referenced in the above article:**

**Data gathering is finished and they are half-way through data analysis. They gave me permission to give you some early, preliminary results, as of March 6, 2009. The study covers 1986-2008 and includes all PPS patients having surgery (excludes sedation cases and patients less than 18 years old). There are 779 patients, a very generous sample size, which will make their results very powerful. Data analysis is complete on the first 300/779 patients. No anesthesia complications occurred. It will take another 6+ months to finish the data analysis, write this up and get it published, so we don't get the final results for a while. But, I think this is a most hopeful study, and it supports my clinical impression that if a good pre-op evaluation is done and if surgical, anesthesia and hospital care are competent, PPS patients can have surgery without problems.**

**Editor's note: The North Central Florida Post Polio Support group does not have follow-up data available as of January 2014 publication. We will endeavor to update you in future communications should it become available.**



7180 SW 182nd Court  
 Dunnellon, FL 34432  
 (352) 489-1731

**The Location for support group programs is at**  
 Medical Plaza (QuickCare) Bldg, Suite 240, 4600 SW 46th Court, Ocala, FL 34474.

# April

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30						

# May

**S M T W T F S**

	1	2	3	4	5	<b>6</b>
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

# June

**S M T W T F S**

				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	