



Genetic testing helps parents make educated decisions. See page 4.

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# Doc Talk

Published for healthcare professionals.

## Ablative Intervention Prior to Drug Therapy for Atrial Fibrillation

Atrial fibrillation (AF or AFib) is an aging-heart disease. As the population has aged, the incidence of atrial fibrillation in the United States has increased — a trend that is expected to continue. According to the Heart Rhythm Society, the number of individuals diagnosed with AF could reach 8-12 million in the next 30 to 40 years — a 135-252 percent projected increase. Along with that increase, the society also expects an increase in the current AF-related hospitalizations (460,000 annually) and deaths (80,000 annually). Because AF increases the risk for heart disease and stroke, finding the right treatment balance between drug therapy and ablation is critical to the effective management of this growing population of patients.

Historically, medical therapy with beta blockers, calcium channel blockers and/or anti-arrhythmic agents has been the first-course of treatment. There are multiple drugs with varying degrees of efficacy and side effects. For example, amiodarone has been shown to have a high success rate in many patients, but it has numerous — some very serious — side effects. Other drugs have fewer side effects, but also a lower success rate.

For patients whose AF episodes are not completely controlled by drugs and who have experienced an increase in arrhythmia frequency, catheter ablation (developed to identify

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## Clinical Trials May Increase Treatment Options

Patients who are referred to Swedish Medical Center for specialty care benefit from having a medical staff that focuses exclusively on clinical care. Many providers at Swedish, however, also participate in research, selecting their protocols because of the potential clinical benefits to their patients or because they believe a trial has the potential to enhance treatment alternatives for conditions that currently have few options.

Currently there are more than 325 principal investigators conducting more than 700 studies at Swedish. The vast majority of these PIs are affiliated with Swedish; however, outside physicians and research units also have partnership contracts with Swedish to coordinate their research and provide Swedish patients additional opportunities to be research participants. These studies represent

### Clinical Research Investigator Training Friday, April 25

For more information or to register, go to [www.swedish.org/CME](http://www.swedish.org/CME).

many different clinical specialties, from chronic pain, liver disease, rheumatology, oncology, neuroscience, and heart and vascular to epidemiological studies, such as studying adverse pregnancy outcomes, quality of life and better ways to provide care.

### Allowing PIs to focus on the research

The Swedish Center for Research and Innovation provides the

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## Ablative Intervention

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and eliminate heart tissue responsible for triggering the irregular rhythm) has been a follow-up treatment.

The natural history of the disease, however, suggests that the longer a patient has intermittent episodes (paroxysmal AF), the more likely it is the patient will experience more frequent episodes and potentially transition to persistent AF. Persistent AF places a constant burden on the heart and can significantly reduce the patient's quality of life.

Cardiologists now believe there may be a benefit to incorporating ablation earlier in the disease process in previously untreated patients who have been diagnosed with paroxysmal AF. As long as the patient is carefully profiled, the confidence level is high that the location of the irregular rhythms can be identified and treated successfully.

"We are now intervening earlier in these patients without necessitating a failure of anti-arrhythmic drugs in all cases," says **Darryl S. Wells, M.D., FACC, FHRS**, a cardiac electrophysiologist at the

Swedish Heart & Vascular Institute. "Earlier procedural intervention may lead to enhanced long-term freedom from AF. Independently, patients may benefit from the elimination of the cumulative side effect/toxicity profile of pharmacologic agents. We believe many cases of paroxysmal AF to be curable in 2014." 

### When to Refer to Swedish

The Swedish Heart & Vascular Institute is fortunate to have the latest ablation technology and cardiac electrophysiologists with the skills and experience to perform these minimally invasive procedures.

Due to the growing AF patient population, cardiac electrophysiologists from the Heart Rhythm Clinic now see patients at Swedish campuses in Ballard, Edmonds, First Hill and Issaquah. Additionally, a fourth electrophysiologist will be joining the practice in 2014.

To consult or refer a patient for treatment evaluation, please call **206-861-8550**.

For more information about Heart Rhythm Clinic, go to [www.swedish.org/ep](http://www.swedish.org/ep).

## Marijuana Smoking and the Risk of Lung Cancer

*Eric Vallières, M.D., FRCSC, Medical Director, Division of Thoracic Surgery*



*Eric Vallières, M.D., FRCSC*

While smoking marijuana may have been legalized, one should not conclude that it is necessarily healthy. For individuals who treat lung-cancer patients, the recently passed Washington and Colorado legislations raise serious concerns.

Having recognized a clear link between tobacco smoking and lung cancer, we are often asked if such a

relationship also exists with marijuana use.

Current medical literature on this issue is about as clear as the medical and epidemiological literature addressing lung-cancer risks in cigarette smokers was during the 1950s. Some epidemiological studies have concluded that smoking cannabis increases the risk, while others have suggested it does not.

These studies, however, are limited by the fact that:

- Many marijuana smokers are also cigarette smokers
- Some users mix tobacco and marijuana in their joints
- The illegality of marijuana use may have influenced the willingness of participants to give honest answers regarding their use of marijuana

There are some facts, however, that we should acknowledge. Laboratory work has demonstrated the occurrence of tissue, cellular and molecular pre-cancerous changes in the airways and lungs of cannabis users that are strikingly similar to those seen in cigarette smokers. Similarly, the carcinogenic effects of cannabis smoke have

been demonstrated in both human and animal models (marijuana smoke contains 50 to 70 percent more carcinogenic hydrocarbons than tobacco smoke). Additional factors that may contribute to the carcinogenic potential of marijuana smoke are:

- Marijuana tends to burn at a higher temperature than tobacco
- Marijuana smoke is typically inhaled deeper and held longer than tobacco smoke

Both factors promote prolonged contact duration of potential carcinogens on the lung lining.

Some argue that one- or two-joints-per-day exposure to these carcinogens does not come close to the one-to-two-packs-per-day contact a cigarette smoker experiences. While this may make mathematical sense, the fact is we do not know of a safe level for such exposures. Some have estimated that one joint a day is equivalent to one-pack-a-day cigarette use. A 2008 study from New Zealand estimated that each joint-year\* of cannabis exposure increases the risk of lung cancer by 8 percent after adjusting for confounding variables, including tobacco smoking. There are also some hints that these cancers may occur at a younger age.

In the same way that making it legal does not make it safe, a lack of data does not mean that there are no serious long-term consequences of smoking marijuana purely for recreational purposes. As a member of the medical community, my fear is that if legalization of marijuana leads to more recreational use by our children and adolescents, we may see an increase in the incidence of lung cancer in the 40- and 50-year-old population 20 years from now. 

\*Three joint-years is either one joint a day for three years or three joints per day for one year.

## Case Study: Atrial Fibrillation

Darryl S. Wells, M.D., FACC, FHRS, Cardiac Electrophysiology, Swedish Heart & Vascular Institute



Darryl S. Wells, M.D.

A 74-year-old man was referred to us for management of atrial fibrillation. His pertinent past medical history was notable for:

- Hypertension
- Diabetes mellitus
- Ischemic heart disease status post four-vessel bypass graft surgery

His cardiac rhythm history was notable for two-chamber pacemaker implantation for sinus node dysfunction and uncomplicated catheter ablation for typical right-sided atrial flutter.

Approximately six months after his ablation for right atrial flutter, he experienced his first episode of atrial fibrillation (AF).

By virtue of his implanted pacemaker, the diagnosis in this case was easy to confirm. What is illustrated quite well in this case is the real-world phenomenon that “AF begets AF.” In other words, AF tends to occur more frequently and of longer duration as time goes on. Over the relatively short span of six months, what began as infrequent episodes lasting one to two hours progressed to near daily episodes lasting up to 12 hours. (See Figure 1.)

The patient was quite symptomatic, with this arrhythmia manifesting palpitations, fatigue and shortness of breath. We had an extensive discussion about possible management strategies. In brief, the concepts of both rhythm control drugs and catheter ablation were explored. The former would be akin to a palliative approach. If the medications were to be effective but then subsequently stopped, the AF would invariably return. The latter option would be a procedural approach that may render a durable cure off of drugs.

This patient was motivated to minimize medical therapy and opted for the route of catheter ablation.

Catheter ablation is a minimally invasive procedure utilizing special IVs in the groin allowing access to the heart. The specific

triggers for most types of AF revolve around the pulmonary veins (PVs) and their intersection into the left atrium (LA). Isolation of these structures by the creation of focal scars is the cornerstone of therapy. Presently, there are two ways to perform this procedure: point-based radiofrequency (heating) or balloon-based cryotherapy (freezing). Both are very safe and highly effective in most patients. This patient opted for the balloon cryotherapy technique.

He was discharged home on post-procedure day one without complication, with no prescribed anti-arrhythmic drug therapy. Reassessment of his pacemaker roughly five months later revealed no evidence of recurrent AF. (See Figure 2.) Not surprisingly, this patient felt markedly better almost immediately.

This case illustrates what we see frequently in clinical practice — AF in many patients can be thought of as a curable disease with catheter ablation.

### Cardiac Compass: 11/12/12 to 05/06/13 Atrial Arrhythmia Trend: 90 days with > 4 hours AT/AF

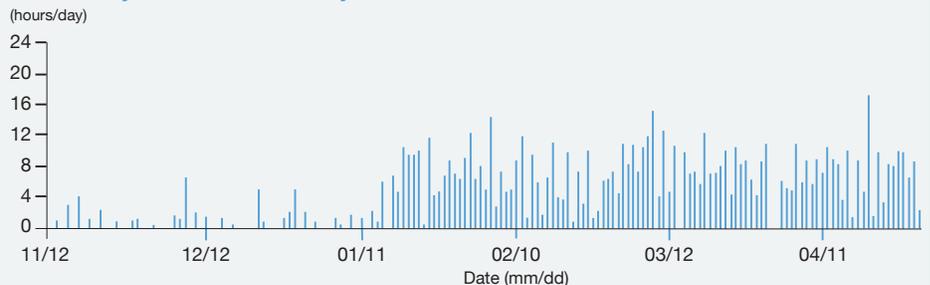


Figure 1. Time is on the X axis and daily burden of AF is represented by vertical lines on the Y axis.

### Cardiac Compass: 04/01/13 to 09/23/13 Atrial Arrhythmia Trend: 24 days with > 4 hours AT/AF

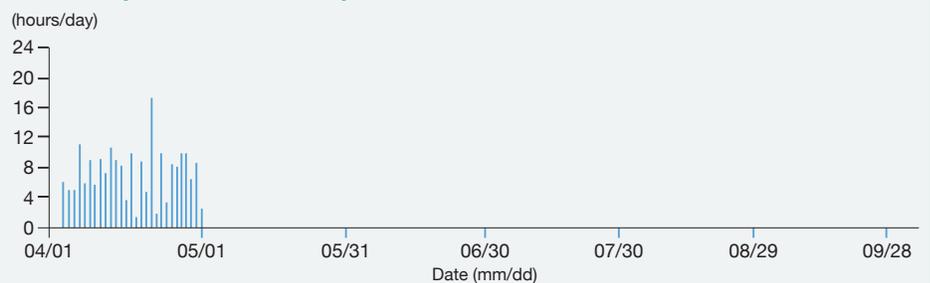


Figure 2. Time is on the X axis and daily burden of AF is represented by vertical lines on the Y axis. The ablation was performed April 30.

## Genetic Screening During Pregnancy

In the mid-19<sup>th</sup> Century, Gregor Mendel, who is widely considered the father of genetics, introduced the world to his research on dominant and recessive traits that are inherited intact. Nearly 100 years later scientists next discovered that they could test blood for these inherited traits.

Since those foundational discoveries, the science of genetics has advanced significantly. Today, there are more than 1,000 genetic tests in use. At Swedish, genetic testing is routinely offered during pregnancy. It is a very personal decision that leads some parents to decline testing, while others choose to pursue their options.

Current genetic testing before or during pregnancy includes:

- **Carrier testing:** Blood test for parents to look for gene mutations that if present in both parents would increase the chance for a genetic disorder in their children.
- **Prenatal screening:** Ultrasounds and blood tests to help determine the level of risk for chromosomal concerns in a pregnancy
- **Prenatal diagnostic testing:** Invasive procedures to detect changes in the genes or chromosomes of the fetus. This comprehensive testing has a high level of accuracy.

As a first step for prenatal screening, we offer all patients a nuchal translucency ultrasound at 11-13 weeks gestation. For an otherwise low-risk patient, this initial testing is usually followed by the first-trimester screen blood draw, which is used to estimate the odds for Down syndrome and trisomy 18.

## Lowering Healthcare Costs

### *Insight for Physicians Referring to Swedish*

The world of healthcare is changing dramatically and rapidly. At Swedish, we are seeking ways to embrace those changes, while maintaining our ability to provide care that is both exceptional and convenient for the patients of our referring physicians. Many of the diagnostics and treatments we provide are not readily available elsewhere, and physicians and patients alike have come to depend on us for that care.

We feel strongly that the cost of care should not be a deterrent to patients' access to the critical care they need, or be a determining factor in whether their physicians refer them to our facilities. Therefore, in 2013 we undertook a thorough examination of our resource utilization and pricing. We focused on specific areas in which efficiencies could help drive down costs or we could offer patients better value, including:

- Imaging (MRI, CT, PET, nuclear medicine, mammography, diagnostic)
- Rehabilitation services
- Pain injections
- Chemotherapy administration and infusion

### When to Refer to Swedish

Swedish Maternal and Fetal  
Specialty Center - Swedish/First Hill  
1229 Madison, Suite 750  
Seattle, WA 98104  
Telephone: 206-386-2101

Obstetrix Medical Group of Issaquah  
Swedish/Issaquah  
751 N.E. Blakely Dr., Suite 2030  
Issaquah, WA 98029  
Telephone: 425-394-5021

Genetic counselors provide evaluations and guidance on testing options for genetic conditions.

Preconception and prenatal genetic testing services at Swedish include:

- Genetic counseling
- Evaluation of family history
- Prenatal screening and diagnostic testing

Please call **206-386-2101** (Swedish/First Hill) or **425-394-5021** (Swedish/Issaquah) to consult or refer a patient.

A high-risk patient is also offered cell-free fetal DNA (CFFD), a newer noninvasive blood test. High-risk patients include women who are older than 35 years of age, and those with a previous pregnancy with chromosome abnormality or an abnormal ultrasound or serum screening. CFFD can be offered to low-risk women, but it may not be covered by insurance.

CFFD testing uses placental cells isolated from maternal circulation. It routinely assesses fetal risk for Down syndrome, and trisomy 18 and 13. Recently, additional rare genetic conditions have been added to the panel.

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- Echocardiogram, EKG and vascular studies
- Sleep studies

On average, pricing for the majority of services has been reduced by 35 percent. Some prices, however, have been reduced by as much as 80 percent. Price reductions affect some of the more common diagnostic services, such as brain MRI, chest X-ray, diagnostic colonoscopy, and transthoracic echocardiogram, as well as many other services.

The new pricing, which went into effect Jan. 1, 2014, is one indication of our commitment to finding new and creative ways of improving access to care. Providing services at locations that are close to home or work, streamlining referral and appointment processes, using limited resources in the most efficient manner and value pricing all play a role in responding to the healthcare needs of our patients. 

### For More Information

If you would like pricing for a specific service or have questions about the implementation of reduced pricing at Swedish, please call **206-386-6996**.

## Genetic Screening

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“CFFD is a significant advance in genetic testing options for pregnant women,” says **Nancy H. Palmer, M.S., CGC**, a licensed genetic counselor at Swedish. “It is not invasive and has a very high detection rate (99 percent) and low false-positive rate (0.1 percent) for Down syndrome.”

Noninvasive genetic testing represents an important first step for parents to gather more information about the likelihood of a genetic concern in a pregnancy. Although the results of a screening cannot be considered 100 percent accurate, they can help parents decide if prenatal diagnostic testing through chorionic villus sampling or amniocentesis is necessary. Genetic counselors at Swedish can help

patients navigate through these test options and follow through by providing an explanation of the test results. They are also able to review family histories.

Reasons for parental interest in genetic testing during a pregnancy are varied and personal. Some parents have high-risk indications, such as a family history of a genetic condition or are older. Others would like information for reassurance or pregnancy management. Armed with genetic test results, parents are able to make educated decisions about invasive genetic testing and pregnancy management, and to prepare for the future care their newborn may need. 

### Case Study: Increased Nuchal Translucency

*Nancy H. Palmer, M.S., CGC, Licensed Genetic Counselor, Swedish Medical Center*



*Nancy H. Palmer, MS, CGC*

A 37-year-old woman presented to her obstetrician with a positive home pregnancy test. Her pregnancy history included one healthy child and three miscarriages. She mentioned that although she has a healthy daughter, she is highly anxious because she has had multiple miscarriages and has a family history of Down syndrome. Her obstetrician referred her to Swedish

Maternal and Fetal Specialty Center for a nuchal translucency ultrasound (NT) and genetic counseling.

After the patient’s NT ultrasound, our genetic counselor met with the patient and her partner to review her ultrasound, and family and pregnancy histories. We discussed the following high-risk factors, as well as genetic testing options:

- Patient’s NT is 3.3 mm at a crown-rump length of 59 mm, which is abnormal
- Patient is of advanced maternal age

Because of these two risk factors, the patient was offered cell-free fetal DNA (CFFD), chorionic villus sampling (CVS) and amniocentesis. CFFD is a noninvasive screening blood test to determine whether there is a high or low chance of common aneuploidies.

CVS and amniocentesis are invasive diagnostic tests. The advantage to these tests is the diagnostic nature of the testing. The disadvantage is that both tests carry a small risk for miscarriage. It is also possible to perform additional genetic tests, such as a single nucleotide polymorphism (SNP) microarray.

The patient and her partner also have other risk factors:

- The patient’s partner has a sister with Down syndrome
- The couple has had three miscarriages

These two additional high-risk factors open the possibility of a hereditary form of Down syndrome (5 percent of cases), which involves a chromosome translocation. Peripheral blood karyotype (PBK) is a blood test that can determine if a parent is a balanced translocation carrier and, therefore, whether the couple is at increased risk for multiple miscarriages and/or children with Down syndrome.

The couple was concerned with miscarriage risks associated with invasive procedures. Instead, the patient opted to begin with CFFD testing and PBK testing for herself and her partner.

The genetic test results showed:

- CFFD-negative for trisomy 21, 18 and 13
- Normal PBK for both the patient and her partner

Based on a negative CFFD test and normal parental chromosomes, the couple opted not to pursue invasive testing. They did not have an increased risk for a hereditary form of



*Increased nuchal translucency is associated with aneuploidy and fetal cardiac anomalies, as well as normal variation.*

Down syndrome based on parental testing, and felt that the high detection rate of CFFD was sufficiently reassuring. They continued with noninvasive testing options later in the pregnancy, including a 20-week anatomy ultrasound and fetal echocardiogram, both of which were unremarkable. The patient was very relieved and ultimately delivered a healthy son. 

## Clinical Trials May Increase Treatment Options

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supporting infrastructure for all research studies conducted at Swedish or using Swedish patients, including:

- Pre- and post-award federal grant administration
- Contract and budget negotiations
- Feasibility and ethics review
- Coordination
- Financial oversight (budgets, reimbursements)
- Clinical trial tracking and billing integration
- Regulatory compliance
- Investigator development and training
- Information technology integration

### Oncology Research

Since its founding in the 1970s, the Research Division of the Swedish Cancer Institute (SCI) has grown steadily, making Swedish one of the leading clinical trial sites in the western United States. Over the years, treatments, devices and technologies developed and/or used by Swedish investigators in clinical research have become the standard of care and contributed significantly to making the SCI a place where patients and their families know they will receive the most advanced cancer care available. Today there are more than 100 active clinical trials under way at the SCI.



Patra Grevstad, R.N., M.N., manager of the Swedish Cancer Institute's clinical research program, and Philip J. Gold, M.D., director of clinical research at the Swedish Cancer Institute, discuss the goals and policies regarding clinical trials for oncology patients at the SCI.

The Swedish Cancer Research Division operates under two guiding principles:

1. Giving cancer patients more choices for treatment
2. Bringing science to the bedside

Cancer research at the SCI allows caregivers to choose from an array of therapies and technologies — many of them not yet available to the public. Current clinical trials at the SCI are investigating new drugs and drug combinations, radiation oncology therapies, screenings for early detection, new surgical techniques, and immunotherapy and vaccines. Other trials are focused on

improving the patient's quality of life, developing teaching methodologies and exploring coping mechanisms that help patients and their families deal with illness.

### Neuroscience Research

The Swedish Neuroscience Institute (SNI) has nearly 100 open clinical trials with more than 900 enrolled patients. It is the only non-academic participant in the National Institutes of Health NeuroNEXT program, a nationwide consortium of neuroscience centers to facilitate clinical trials across a wide range of neurological illnesses.

A few examples of clinical trials at the SNI include:

- MR-guided focused ultrasound to treat essential tremor (expanding soon to include patients with Parkinson's and brain tumor)
- Phase I and II studies to find alternative therapies for multiple sclerosis
- New therapies for growth hormone deficiency, acromegaly and Cushing's disease
- A phase I stem-cell study for ischemic stroke and a leading-edge trial for acute ischemic stroke using ultrasound to facilitate lysing of thrombus
- Neuro-ophthalmology trials for ischemic optic neuropathy and idiopathic intracranial hypertension
- Trials for patients with primary or recurrent glioblastoma, including a device/drug combination therapy and an autologous dendritic cell study

The Ben and Catherine Ivy Center for Advanced Brain Tumor Treatment (Ivy Center) is using next-generation sequencing technology to analyze the genetic makeup of patient's tumors and is creating a database that will make this information freely accessible by medical and scientific communities worldwide. Other research at the Ivy Center focuses on cytomegalovirus (CMV), tumor stem cells and immunotherapy, with an overall goal of translating promising research findings into clinical trials to prolong patient survival and ultimately find a cure for brain cancer.



SNI is one of only a few sites in the U.S. with the focused-ultrasound technology that is being used in a clinical trial to treat essential tremor (ET). The InSightec ExAblate Neuro, developed by an Israel-based company, is a \$1.5 million system that was installed at Swedish's Cherry Hill campus last spring. It transforms sound wave energy into heat and is used to focus 1,000 individual beams of sound onto a specific site on the thalamus to reduce ET and Parkinson's symptoms. Photo courtesy of InSightec.

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## Heart and Vascular Research

The Swedish Heart & Vascular Institute (SHVI) has about 90 open clinical trials with more than 1,000 enrolled patients. From minimally invasive methods to repair the mitral valve to stem cell therapy, heart and vascular research brings new technologies and therapies to daily clinical practice.

Ongoing studies at the SHVI include:

- New percutaneous device therapy for structural heart disease that includes new methods to detect right-to-left shunt in the heart's septum
- Using a device to close the left atrial appendage in patients with atrial fibrillation
- Using a clip to repair the mitral valve for patients with heart failure
- Stem-cell-based therapy that harvests cells from bone marrow for ischemic heart disease

Investigators at the SHVI developed an investigator-initiated trial exploring the benefit of using infrared spectroscopy to determine lipid content in the three main coronary vessels. The SHVI is also currently participating in clinical trials evaluating the effectiveness of bioresorbable stents for coronary disease, the use of catheter ablation and pharmacotherapy for atrial fibrillation, and a new valve system for aortic valve replacement surgery.

## Research with a Specialty Focus

Many of the research efforts at Swedish focus on improving treatments that have the potential to affect the care and quality of life for many patients. For example, pain management specialists have just completed the evaluation of a new stimulation device for chronic back pain. This particular study underscores the benefit to patients enrolled in clinical trials at Swedish by providing treatments they would otherwise be unable to access.

Other specialty-related clinical trials include:

- A partnership with a local rheumatologist to evaluate treatment for psoriatic arthritis
- Using a cooling mechanism and robotics during a prostatectomy to help prevent incontinence
- A liver dialysis trial
- Asthma and COPD trials

Patients who choose to enroll in a clinical trial at Swedish remain under the direct care of their personal physicians and receive the support of a team that includes research staff who provide specialized care for study-required procedures.

For more information about clinical research at Swedish, how to partner with Swedish on a study, or to determine if a specific research study might be available for one of your patients, go to [www.swedish.org/research](http://www.swedish.org/research) or call 206-215-3100. 



Since 2000, Swedish has participated in the International Early Lung Cancer Action Program (I-ELCAP), an early-detection study. This large, multicenter study uses low-dose CT to screen patients who are at high risk for lung cancer.

## Swedish Health Services Quick Reference

### Ballard

5300 Tallman Ave. N.W.  
Seattle, WA 98107-3985  
206-782-2700

### Cherry Hill

500 17th Ave.  
Seattle, WA 98122  
206-320-2000

### Edmonds

21601 76th Ave. W.  
Edmonds, WA 98026  
425-640-4000

### First Hill

747 Broadway  
Seattle, WA 98122  
206-386-6000

### Issaquah

751 N.E. Blakely Dr.  
Issaquah, WA 98029  
425-313-4000

### Mill Creek

13020 Meridian Ave. S.  
Everett, WA 98208  
425-357-3900

### Redmond

18100 N.E. Union Hill Road  
Redmond, WA 98052  
425-498-2200

### Swedish Medical Group

600 University St., Ste. 1200  
Seattle, WA 98101  
206-320-2700



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DocTalk is produced by Swedish Health Services for educational purposes. We invite readers to share their comments and offer suggestions for future topics by contacting us at [DocTalk@swedish.org](mailto:DocTalk@swedish.org). Archives of articles and case studies previously published in DocTalk, as well as DocTalk videos, are available online at [www.swedish.org/DocTalk](http://www.swedish.org/DocTalk).

Case studies are provided with the consent of the patient or with personal health information removed or altered in order to protect patient privacy.

## DocTalk: Email and Print Delivery Options

Swedish Health Services produces *DocTalk* six times a year as a service to physicians. The articles and case studies that appear in the newsletter are designed to provide insight into services at Swedish's various locations that physicians may need for their patients. We encourage physicians to share the publication with their staff members.

*DocTalk* is distributed primarily via mail to primary-care and emergency-medicine physicians in the Greater Puget Sound Area.

Swedish also makes the newsletter available via email for any primary- or specialty-care physician who is interested in learning more about Swedish programs and services, and would like to receive that information electronically. To subscribe to the email version of *DocTalk*, please send your first and last name, specialty and email address to [doctalk@swedish.org](mailto:doctalk@swedish.org). 

## CME Course Listing – March – May 2014

Physicians from across the region and around the world come to Swedish Medical Center's Continuing Medical Education (CME) courses to learn about new research and innovative treatment techniques.

For times and locations, go to [www.swedish.org/cme](http://www.swedish.org/cme) or call 206-386-2755.

### Swedish Digestive Health Summit

Friday, March 14

### High-Risk Obstetrics: Tools for the Family Physician

Friday, March 28

### Swedish Pituitary Symposium: Updates in Pituitary Management

Friday, April 4

### 4th Annual Pacific Northwest Head and Neck Cancer Symposium: Update on Oral Cancer in the Era of HPV

*Co-sponsored by Seattle Cancer Care Alliance, UW Medicine and Swedish Medical Center*  
Friday, April 11

### Transradial Approach: A Case-based and Hands-on Training Course

Friday, April 11

### Palliative Care: Becoming a Compassionate and Caring Presence

Friday, April 18

### Clinical Research Investigator Training

Friday, April 25

### Annual Oncology Symposium: Thoracic Malignancies

Friday, May 2

### Eighth Annual Cerebrovascular Symposium: Controversies in Stroke and Cerebrovascular Disease

Friday, May 15

Join our email list at [swedish.org/CMEProfile](http://swedish.org/CMEProfile)

Swedish Medical Center is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.