Allergies are kicking up, and there is plenty of help for you if you treat it early. Refer back to the previous reports on my website for information on hay fever, house and outside allergies, asthma, bronchitis, etc. A nasal cortisone spray (Nasocort) is now over the counter (OTC). It is worth considering purchasing it and using it every day to prevent allergies when your season is here. But always consult with your physician first. Just because a medicine is OTC, does not mean you should not consult your doctor. I will be sending you a questionnaire this month in a separate email. I need feedback on the report.

SUBJECTS THIS MONTH:

A. The guide to the Future of Medicine—amazing technology

B. Testosterone therapy—be careful

C. More on breast cancer—reconstruction, BRCA gene mutations; surgical margins on lumpectomy

D. More thoughts on obstructive sleep apnea
E. Food addiction--signs
F. Silent stroke vs. TIA (transient ischemic attack)
G. New information on statins
H. Strokes in women
I. New recommendations for nutrition food labels
J. Lavender pills have clinical significance
K. FDA approves an even stronger hydrocodone?
L. FDA advisory committee recommends the HPV virus test to replace the Pap Smear?? Not so fast!!

M. Back Surgery-options

Spring is coming!

A. The Future of Medicine—Bertalan Mesko, MD, PhD
There are 40 factors he described. I will report on most of these and this month the first 10 factors. Next month, I will report on another 10.

1) **3D Printed Biomaterials and drugs**  
Can you imagine a printer that can reproduce organs with 3D capability. It has already been done creating external ears. Drugs can
be created with the same technology just using the biochemical name. Regulation will be a large hurdle, but it is coming.

2) **Adherence control (compliance)**

Getting patients to be compliant is a huge issue. Imagine a pill bottle that glows blue when it is time for a pill, or glows red when you miss a dose. Reminders from doctor's offices have helped greatly, but reminders right at home for taking medicine would be awesome.

Sensors in pills when swallowed could have biographical information sent to your doctor such as pulse rate, respiratory rate, and blood pressure. Emails from doctors are beginning and patients are getting answers to medical questions by email from the nurse, which would really save time and money. Results of tests via email are already here in some large medical centers. Streamlining medical information will enhance patient care greatly.

3) **Artificial intelligence assisting in medical decision making**

There is a large push in medicine today to have all evidence-based information to draw from to create **guidelines for every disease.** I am
currently involved in creating guidelines for cancer survivors after treatment for primary care professionals with the American Cancer Society. This means that every statement that is made is backed up by research that has been published. There will apps on the internet for every disease in the next few years. Extend that a step further. Placing symptoms in a computer will help guide the physician on what to be thinking about and what tests to order in the form of an algorithm (directions from one step to the next in diagnosing and treating diseases). WebMD has an app for this very thing and is free. This means the findings of certain tests will recommend other tests to be ordered to narrow down a diagnosis. Let me caution everyone about this way of diagnosing and treating. Every patient is different and as long as there are guidelines and not rules, that is fine. If the government takes over our healthcare system, it won’t be long before there will be rules. Abuse of this system would be pretty easy.

4) Artificial organs
This will soon take the pressure off transplantation organ donors. They may be temporary or even permanent in the future. The 3D printer has already been discussed above. A nose can be formed on the forehead and then with a flap from the middle of the forehead and the nose can be put in place. I have performed these in the past for trauma and cancer patients, but they have been much more refined with tissue copying.

5) Augmented Reality
Google glass—Imagine seeing exactly what the surgeon is doing from his perspective in training new surgeons through the use of Google glass. What if you could put on a pair of contact lens that would sync with your brain to dial numbers such as 911 while you were performing CPR, call the ambulance, alert the emergency room, etc. It is coming.

SEGWAYS

6) Augmenting human capabilities
Did anyone see the story on the “Segway” that can allow a paraplegic to stand and get around. It comes with a machine that picks the paralyzed or legless person up and then put them right on a Segway and straps them in. Or the woman with ALS who could direct a computer to move her arm from electrodes implanted in her brain.

7) Curated medical information—Electronic medical record
The electronic medical record is going to transform medicine, and is here today. Only the larger practices have it because it is costly, but in time, your doctor will have to have it to stay up with his or her patients, and to relay information to other doctors instantly. Doctors have 2 more years to have a totally compatible system. After that, they will be “fined” for not having it. This alone has pushed doctors into becoming employees. And yet, the VA has not even started the system. Tragedy!!! Abuse of this system will also need to be prevented.
8) **Customized medical Apps**
I already touched on this. Apps will be a must for all people to stay up and already are. Above is a BP cuff plugged into a smart phone.

9) **Digestible Sensors**
These sensors will monitor how well a pill or food is absorbed, what vitamins are needed, and what substances the body will need to stay in balance.

10) **Medical education and social media**
Doctors will have to be taught all this technical information about mobile apps, and examples such as biogenomics to determine the best cancer drug to use based on the genetics of a cancer cell or the best heart drug based on the genetics of individual patients. This is already having application now in chemotherapy for the medical oncologist. Someday, the correct number of radiation treatments may be determined by this same method. We already know that if a patient has a HPV (human papilloma virus) positive throat cancer, the cancer is much more responsive to less radiation.
Just one month ago, there was a report that stated DNA analysis will be able to diagnose a high percentage of cancers in the near future.

Biomarkers are going to play a bigger role in treating disease. These biological genetic markers will assist the oncologist in determining what additional biologic drugs can help treat certain disease from autoimmune diseases to cancer.
Deciding who will best benefit from hormone replacement therapy for postmenopausal women will soon be less of a guessing game in the near future. Even adding progesterone for some women will be tested before considering that additional hormone, since at this time, it can increase the risk of uterine cancer in certain subsets of women. Finding out which subset it will not increase risk will allow the doctor to use progesterone.

**B. Testosterone therapy—caution!**

The latest studies on testosterone use have shown an increase risk in older men (greater than 65 years of age) for cardiovascular death. There is no free ride, it seems. Be sure if you have a low testosterone level, your symptoms are really due to low T. The side effects of testosterone also include worsening of BPH (enlarged prostate), weight gain (yes some will be muscle), hypertension, possible acceleration of a prostate cancer. There is good evidence for improvement in insulin resistance, lipids, and mood improvement. Erectile dysfunction is a little tricky but may be helped, but the Viagra type pills may be a better or additional solution. When you listen to all the commercials about low T and erectile dysfunction, one has to wonder if Big Pharma is feeding our masculine inadequacy with meds that could cause more harm than
good and just putting billions (2 billion to be exact) in their own pocket. Thoroughly discuss this with a specialist (urologist might be best). Some primary care doctors may be a little too quick to write the prescription. A complete evaluation is recommended by a urologist. The lawyers are already circling!

### Why Would TT Increase CV Risk?

**Proposed mechanisms for elevations in CV-related risk with TT:**
- Increases in blood pressure
- Polycythemia
- Hyperviscosity/increased platelet aggregation
- Increases in circulating estrogen
- Reductions in HDL-C

**Limitations of studies examining CV risk include:**
- Observational in nature with potential hidden confounders
- Indications for testosterone treatment are unclear
- Diagnostic accuracy of adverse events unknown

### Recommendations for Use of TT

- Only men with symptoms should be assessed for TD
  - Diagnosis of TD requires 2 morning samples
- Serum testosterone levels should be reassessed 3-6 months after initiation of TT
  - Mid-normal testosterone levels as treatment goal
- Avoid TT in men with:
  - Palpable prostate nodules
  - PSA > 4 ng/mL or > 3 ng/mL in high-risk individuals
  - Hot > 50%
  - Severe LUTS
- Use with extreme caution:
  - *Men with a history of heart disease*
Anjolina Jolie chose a prophylactic bilateral mastectomy because of her strong BRCA gene mutation in her and her family. This has become more popular in recent years since the ability to diagnose these mutations. She is planning a prophylactic ovary removal too (bilateral oophorectomy).

After breast cancer surgery, depending on the size of the breast and the amount removed with surgery, there are 2 basic choices for reconstruction. Breast reconstruction using tissue (TRAM FLAP) from the abdomen tunneled
under the abdominal wall to the breast defect with pedicle of tissue is the most common approach when a good deal of the breast is removed, however with conservative removal, a breast implants can be placed and the other breast contoured so that they have a similar appearance.

The drawing on the left shows a Tram Flap and the one to the right is a before and after of using an implant.

Mastectomy with breast reconstruction has increased overall to 46% of breast cancer survivors as of 2009. The reason is that many of these patients are not having any other form of treatment (radiation therapy) and therefore can choose breast implants instead of tissue reconstruction. Flap reconstruction is more commonly used when chemo and or radiation therapy is used as well. Breast implants for multiple therapy treatment may be less desirable because of the amount of tissue taken, multiple therapies, and the concern of recurrence since these patients probably have later stages of cancer. However, having reconstruction at the same time as the cancer surgery (before the pathology report shows adequate margins is risky, since there is a 20-25% re-excision rate after lumpectomy, because of positive margins). New guidelines are recommended for the original surgery (too complicated to explain). Your surgeon should be able to explain it.
If a woman has a positive family history and decides to have genetic testing for the BRCA gene mutation (60-85% chance of getting breast cancer in the woman’s lifetime), many women are considering bilateral prophylactic mastectomy to prevent breast cancer in the future (Anjolie Jolie). Tamoxifen, an anti-estrogen agent, if the cancer cells are estrogen positive (or progesterone positive) is a very good alternative to mastectomies. But, it is increasingly difficult for doctors to convince survivors to take a drug for 5-10 years instead of going through with bilateral breast mastectomy. This is a difficult discussion.

Once a woman has a cancer removed, and it is tested for gene mutation and positive, most women also need to consider bilateral mastectomy or Tamoxifen preventative therapy because of the higher risk of a second breast cancer and or recurrence. Without mutations, there is little benefit to have a second mastectomy, and yet, women are asking their doctors for the extra surgery.

Without adequate family history and other indicators such as finding out there are cancer markers like BRCA gene mutations in the removed cancer cells, a second mastectomy is not indicated, since having a second mastectomy does not improve survival rates. This is another tough call for doctor and patient. If the cancer is estrogen positive, Tamoxifen is the preferred preventative to prevent recurrence.

If a high risk cancer indicator is found after the first breast cancer surgery, having the other breast removed had a 88% survival compared to a 66% survival without added treatment. Taking Tamoxifen, an anti-estrogen agent would be a good alternative to a second breast mastectomy if the cancer is estrogen or progesterone positive).
Patients with a Stage I or II breast cancers found to have BRCA positive tumors live longer if they undergo bilateral mastectomy. A recent study reported better survival even if they wait for a few years to have the second mastectomy.

Patients should not think about reconstruction without first being sure that the appropriate cancer treatments are going to be carried out. Staging the procedure may be wiser than having cancer surgery and reconstruction at the same time.

Women report a greater quality of life score in studies, when reconstruction is performed, especially in younger, working women, who have great concern for body image issues usually in pre-menopausal women. That is not to say, that body image is not a major issue with most women regardless of age.

Ref. The American Society of Clinical Oncology

Below are the USPSTF (United States Preventive Services Task Force) recommendations for testing for the BRCA gene mutations.

Population: This recommendation applies to asymptomatic women who have not been diagnosed with BRCA-related cancer.

Recommendation: The USPSTF recommends that primary care providers screen women who have family members with breast, ovarian, tubal, or peritoneal cancer with 1 of several screening tools designed to identify a family history that may be associated with an increased risk for potentially harmful mutations in breast cancer susceptibility genes (BRCA1 or BRCA2). Women with positive screening results should receive genetic counseling and, if indicated after counseling, BRCA testing. (B recommendation) The USPSTF recommends against routine genetic counseling or BRCA testing for women whose family history is not associated with an increased risk for potentially harmful mutations in the BRCA1 or BRCA2 genes. (D recommendation)

Bilateral removal of the ovaries in BRCA positive women decrease the chances by 40-65% of developing ovarian cancer, and gives the best results if performed before age 40, but even after 50 there is still benefit.

One more pearl! Birth control pills (10 years or longer) decrease the risk of ovarian cancer by as much as 50%, which has been known for some time, but not until a new study was just published that reported even in BRCA positive women, birth control pills still decrease the risk of ovarian cancer. This information still has to be weighed against the continued risk of cancer above the general population in BRCA positive patients. Ref. OBGYN, 2013
D. Follow up on the new treatment for obstructive sleep apnea

Recently, I reported on the new “pacemaker” like implant to stimulate the base of the tongue when obstruction of the airway occurs during sleep causing apnea. Millions of Americans have this disease, which interferes with normal sleep. As we have learned, poor sleep aggravates neurologic, psychological, pulmonary-cardiovascular, and metabolic diseases from Alzheimer’s to hypertension. The FDA has just approved this new implant which requires a monitor to be placed under the skin on the chest wall (just like a pacemaker), with wires that are traced through the neck to the nerves that stimulate movement of the tongue. When the tongue is stimulated, it protrudes just enough to move it from the back of the throat, thereby relieving obstruction, allowing the patient to take in air. For more information, log on to website in my recent Feb. medical report. The FDA has approved this procedure for patients who have at least 20 apneic episodes
per minute (very common), have tried CPAP or dental prostheses and not adequately helped, and those that can’t tolerate CPAP.

In one study, out of 126 patients, only 4% failed and required surgery to shorten the palate, etc. (UVP-see drawing below). Having performed hundreds of these procedures (60% success in my hands), there are those that have too big a tongue for the mouth, a short jaw (which forces the tongue backward), are too obese, etc., this is a nice addition to the options for these patients. I have reported on OSA (obstructive sleep apnea) many times over the past 2 plus years. Severe snorers and those that reportedly have breath holding episodes during sleep by their bed partner, should have a sleep study at a licensed Sleep Center at the direction of an ENT surgeon or pulmonary specialist. These centers are available in most reasonable sized cities.

Surgery procedure to relieve OSA–UVP
E. Signs of food addiction

a. End up eating more than planned when you eat certain foods
b. Keep eating even when you feel full
c. Eat until one feels ill
d. Worry about not eating types of foods or worry about cutting down on certain foods
e. When certain foods are not available, going out of the way to get them
f. Eat so often one starts eating instead of working, spending time instead of family, or recreational activities
g. Avoid professional or social situations where certain foods are available because of the fear of overeating
h. If one cuts down on certain foods, does it cause anxiety, agitation, or physical symptoms
i. Eating makes one guilty
j. Eating more and more to decrease negative emotions
k. Eating the same amount of food doesn’t reduce negative, symptoms or increase pleasure the way it used to

www.foodaddictsinrecoveryanonymous.com

12 tep program. There is a strong correlation between eating disorders and type 2 diabetes, and also depression and diabetes.

F. What is the difference between a silent stroke and a TIA (transient ischemic attack)?
A silent stroke usually shows no typical signs of a stroke, whereas a TIA will temporarily show typical signs of a stroke that go away, usually in a few minutes. Silent strokes are blood clots in the blood vessels of the brain that don’t dissolve, whereas a TIA has a clot that dissolves usually within 5 minutes. Silent strokes are permanent, and by definition, a TIA is transient. Both are trouble. Classic signs of a TIA or actual stroke (call it a brain attack) are weakness of one side of the body, speech difficulty, sudden loss of vision, acute dizziness, headache, and confusion with difficulty saying what you want to say (expressive aphasia). The only way a silent stroke can be diagnosed is if a CT of the brain is performed. Several silent strokes may lead to decline in memory and cognition. A TIA should be considered an emergency. Call 911.

Here are the two kinds of strokes (ischemic and hemorrhagic):

G. When low dose statins are used, adding exzetimibe (Zetia) may be as effective as high dose statin. Recently the American College of Cardiology came out with new guidelines for managing the risks of heart disease and stroke, which is extensively reported in my
recent reports. Since high dose statins are recommended for higher risk patients like type 2 diabetics, they may not be able to tolerate them because of muscle pain, a side effect. A recent study recommends the alternative of the fat blocker (in the stomach) Zetia plus a low dose statin. Previously, studies did not recommend adding Zetia to Statins, but now they are suggesting your doctor consider it in patients that need high dose statins but can’t tolerate them. This is especially true in patients with known heart disease.

This is a perfect example why I report on these late breaking medical issues. Can you imagine doctors having to stay up with all this information? I could not if I was practicing.

H. FDA changes in nutrition labels. Note the emphasis is on calories, amount of sugar added and the serving size people actually eat. It is easier to read, but the key is to read every label, so you know what you are consuming. The public has 60 days to comment before adopting these new labels.
I. Lavender oil pills have been clinically proven to treat anxiety disorders and are especially helpful for anxiety interfering with sleep. It also has pronounced antidepressant effect with improved mental health and health related quality of life. Massage therapists and aroma therapists have long used lavender oil for its calming effect, but taken orally (80mg per day) has now given us scientific proof of the natural product, Lavandula oil. Inhaling the vapors from lavender oil before bedtime sounds
pretty good, but its therapeutic benefit has been proven only in an orally consumed product. Ref: International Journal of Neuropsychopharmacology 2014, Jan 23.

J. Stroke risk for women-the differences and overlap in men

Below are the stroke risks for women and men. Hormones make a big difference in risk, and therefore, the actual risk is higher. It is particularly strong with a woman who is obese, smokes, and takes BCP (birth control pills).

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>Sex-Specific Risk Factors</th>
<th>More Prevalent in Women</th>
<th>Difference in Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pregnant</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preeclampsia</td>
<td>X</td>
<td></td>
<td></td>
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<tr>
<td>Gestational diabetes</td>
<td>X</td>
<td></td>
<td></td>
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<tr>
<td>Oral contraceptive use</td>
<td>X</td>
<td></td>
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<tr>
<td>Postmenopausal hormone use</td>
<td>X</td>
<td></td>
<td></td>
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<tr>
<td>Changes in hormonal status</td>
<td>X</td>
<td></td>
<td></td>
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<tr>
<td>Migraine with aura</td>
<td>X</td>
<td></td>
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<tr>
<td>Atrial fibrillation</td>
<td>X</td>
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<tr>
<td>Diabetes and its</td>
<td>X</td>
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<tr>
<td>Hypertension</td>
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<tr>
<td>Physical inactivity</td>
<td>X</td>
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<tr>
<td>Age</td>
<td>X</td>
<td></td>
<td></td>
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<tr>
<td>Prior cardiovascular disease</td>
<td>X</td>
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<tr>
<td>Obesity</td>
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<tr>
<td>Diet</td>
<td>X</td>
<td></td>
<td></td>
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<tr>
<td>Smoking</td>
<td>X</td>
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<td></td>
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<tr>
<td>Metabolic syndrome</td>
<td>X</td>
<td></td>
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</tr>
<tr>
<td>Depression</td>
<td>X</td>
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</tbody>
</table>
K. New FDA approved extremely potent time release capsule of hydrocodone (Zohydro is a mistake!!! New recommendations for acetaminophen use

Doctors throughout the country are sending letters to the FDA to pull a new formulation of a 5-6 times more potent hydrocodone capsule that has just been approved. The reasoning behind the approval was to provide a very potent form of Oxycontin, Vicodin, etc. types of narcotic in a new capsule called ZOHYDRO ER and remove any acetaminophen (Tylenol) from the capsule, because acetaminophen can cause liver toxicity in as little as 3000mg per 24 hours. All of the usual prescriptions written for pain containing the synthetic codeine, hydrocodone, also contain acetaminophen with at least 325mg per pill. Extra strength Tylenol contains 500mg per capsule. It has already been recommended that any pill or capsule containing more than 325mg. be removed from over the counter meds. It would take only 9 pills of Vicodin or Oxycontin, etc. in 24 hours to ingest 3000mg of
acetaminophen. The recommended limit by the FDA was changed from 4000mg per 24hrs, because of the increase in cases of liver toxicity from acetaminophen. The two drugs (hydrocodone and acetaminophen) were combined because they accentuated the benefit of each drug separately, and it kept the patient from taking so much hydrocodone.

Then the FDA decided to approve a new hydrocodone time-release capsule 5-6 times the potency of the usual pill, but made two mistakes in their logic. One, it is way too potent. Recent studies have shown increasing the dose of hydrocodone does not improve pain relief. Two of these pills, in someone who had not been taking them regularly, is enough narcotic to overdose or kill the patient, certainly a small adult or child. Two, there is no abuse preventing drug in it, like naloxone. Naloxone and buprenorphine are used to treat narcotic addicts. These pills are narcotics but do not give the “buzz” regular narcotics can give. Is it the buzz that makes us tolerate the pain better or is it the actual pharmacologic benefit of the narcotic. The two above pills have proven that you can treat pain without the buzz. Why are these pills not recommended for pain in the general population?

32 states have responded to the FDA, asking them to pull their approval of Zohydro. I wonder (Big Pharma) whose palm was “greased” to get this dangerous drug approved. Next month, I will report on narcotic addiction in general. With Philip Seymour Hoffman, a great actor and lifelong addict, overdosing on heroin, it is a timely discussion.

60% of all addicts are hooked on prescription drugs!!

L. FDA Advisory committee recommends HPV virus test to replace Pap Smear......not so fast!!
The advisory committee has just recommended to the FDA to replace the Pap Test to detect early cervical cellular abnormalities. The Pap smear has been around since the 1950s, and was the first screening test we had for any type of cancer. Since the HPV virus causes most cervical cancer, the recommendations came because they can alert the doctor that there is risk for cervical cancer. The Pap smear detected dysplasia, a pre-cancerous condition. Since it was recently observed that most cervical cancer were caused by 2 strains of the human papilloma virus, the HPV test has been a second test recommended behind the Pap smear. Some recent studies showed that the HPV viral test taken at the time of a pelvic exam was more specific for cervical cancer than the Pap smear. This is going to cause a great stir in the medical community, so we will see if the FDA recommends replacing the Pap test.
Surgery in most cases should be the last option. That is not true if the MRI scan and symptoms are severe enough to recommend immediate surgery. Impingement on the spinal cord, fracture, bowel and or bladder weakness, severe weakness in the extremities would have to be considered cause for great alarm.

The types of surgery may depend on the extent of disease at any one vertebral level or disease at several levels. Usually the lower back disease includes 3 levels. That does not mean all levels must be surgically addressed.
Surgical intervention include:

1) Relief of impingement of spinal nerves as they pass through the vertebral canal, removing a herniated disc and or arthritic spurs. 2) A laminectomy is a procedure to get to the area of concern. 3) A foramenotomy refers to cleaning out the intervertebral canal. This can be performed with a classic open procedure or through microscopic techniques with or without special techniques including lasers. It really depends on the experience of your surgeon and what works best in his hands. 4) Spinal fusion—if too much bone must be removed for the spine to remain stable or the disc has been removed or been destroyed by disease, the vertebrae above and below the surgery must be fused to provide stability and protection of the spinal cord.

Techniques to fuse include metal plates and screws and mesh baskets with bone marrow and bone chips usually from the hip (pelvic rim) or cadaver bone. Cadaver bone is from another human. It is irradiated or freeze dried to prevent any infection or reactivity. Having just had my wife go through this surgery in her neck with fusion, and having the bone removed from her hip, I think I know why a lot of surgeons use cadaver bone.....they don’t want to listen to the patient complain about their hip. But, our surgeon believes he gets better results and fewer complications, and I would never ask a surgeon to change his procedure. That is a discussion you must have with your surgeon.

These are the most common procedures although there are less common other options.
Plates and screws fusion

Hip bone donor removal

Bone marrow paste and hardware fusion
There are some good videos on back surgery found at www.WebMD.com

Rehabilitation will frequently determine how well your results are. Surgery is a partnership between the doctor and the patient. Motivation and hard work to recover is necessary. It may take most patients 6-8 weeks to recover. Getting back to normal activity will take months. Be sure you know your responsibility when you have any surgery.
This completes this report for April, 2014. You are always welcome to respond on my blog (website) or directly to me by email samlamonte@gmail.com

I will send you some of you questions to answer about these reports this month. Please give me feedback.

Stay healthy and well my friends, Dr. Sam