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The Miracle of DNA Analysis in Changing Your Future

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Your Life Your Health

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The September, 2008 issue of *Discover: Science, Technology, and The Future*, has a number of fascinating articles. I bought the magazine in the Philadelphia Airport and read it cover to cover before landing in Houston. I am pleased that I did because one of the articles opened up a whole new area of medicine to me. Entitled, *DNA is not your destiny: The Tests That Can free you*, the article relates the state-of-the-art of knowing your future from your genetic code. This article will impact my practice of medicine every day and its lessons can change your life forever as well.

Reporter Boonsri Dickinson sent her DNA to three testing companies. After spending \$4,500 dollars on these tests; after distilling all of the results of the tests; after learning everything which science currently can tell her about her future, what was the conclusion? What life-transforming knowledge did she acquire for her money? It is absolutely amazing! It is life-transforming!! You should get your money and DNA sample off to the companies without delay. Oh, what were her results and what were the recommendations for changing her future?

“While the results were sometimes conflicting, the advice was basically the same: **Stop smoking, lose weight, exercise more and control blood pressure.**”
(emphasis added)

Ms. Dickinson, concludes the article with this comment:

“For now, as I sit in my office with an iced coffee in hand and log on to Navigenics, I check out what I can do to prevent multiple conditions (as if it’s a luxury); *Exercise*, I run every day. *Don’t smoke*, Never have. *Healthy diet*. I think so. *Healthy weight*. I hope so. *Vitamins*, Um, I should start, *Lower blood pressure*. No clue what mine is. *Lower cholesterol*. Oh, man, I don’t know that either. Time to see my doctor. *Avoid hormones*. Can’t Reduce Stress. Ok, after this story. *Get enough Sleep*. Ditto. *Avoid Alcohol*. I have, thanks to the DNA tests. *Don’t wear high heels*. What, really?

“I click ‘sign out.’ I try to forget about the risks and live life the best I can. Whatever my biological destiny is, at least I think I can change it a little” (p. 29)

. You have a choice, spend \$4,500 or follow SETMA’s **LESS Initiative!** **LESS** stands for:

L -- Lose weight

E -- Exercise

S -- Stop

S -- Smoking

Here is how the Initiative works. Every time a patient is seen in the clinic, no matter what the occasion for the visit is, they will be alerted to the health risk of:

- Their current weight , as measured by their body mass index (BMI) and their body fat content. They will be given a Weight Management Assessment which tells them their BMI, their disease risk associated with their current BMI and waist measurement, their percent body fat and an explanation as to how a 5% change in their body fat will impact their health and future.
- The benefit which their heart and lungs are receiving from their current participation in exercise as indicated by the "aerobic points" which that exercise achieves for them and a recommend minimum exercise level which they need in order to achieve a "good" aerobic status for their age and sex. This exercise prescription will include information on how to increase the number of steps they take each day in order to have an "active" lifestyle which is defined by taking 10,000 or more steps a day. The average America takes fewer than 6,000.
- The imperative for stopping smoking. Even the tobacco companies' websites now state, "The only way to avoid the health hazards of tobacco smoke is to stop smoking completely." This is clever because with this warning, the tobacco companies which continue to encourage tobacco smoking have immunized themselves from future litigation because they have warned you that their product is harmful. Now, legally, the only one to blame for the harmful effects of smoking is the smoker. Also, the initiative includes the questioning of patients about exposure to "environmental tobacco smoke" either at home or at work.

The following documents are given to each patient, each time they come to the clinic:

1. Weight Management Assessment - one page
2. Exercise Prescription - 7 pages
3. Smoking Cessation - 7 pages
 - a. Smokers will be given the full smoking cessation document
 - b. Non-smokers who are at work or at home with a smoker will be given a document on the hazards of what has been variously called "environmental", "second-hand" or "passive" tobacco smoke.

While this initiative may seem to be simple, it is a rather complex undertaking. To do this occasionally is simple, but to consistently do it every time a patient is seen is not. At the end of each day, a report will be run which will determine if the above three documents were generated in the electronic medical record and if they were actually printed. A

random sampling of patients leaving the clinic during the day will be used to develop confidence that the documents have actually been given to the patients.

Shared Responsibilities

The **LESS Initiative** is dependent upon the sharing of responsibility by the various members of SETMA's healthcare team:

1. The IT team (Information technology) has made it possible to easily and conveniently produce the documents and to audit the performance.
2. The Nursing and support staff collect the data - weight, height, waist size, abdominal girth, hip measurements, neck size, chest size, body fat, etc. - which allows the computation of the information used in determining the patient's health risk.
3. The Nursing Staff create, print and distribute the documents, as well as initiate the discussion with the patient of the information in each.
4. The Healthcare Providers - physicians and nurse practitioners - interact with the patient about the imperatives for change which are indicated by the information in the document, discussing with the health risks of doing nothing and the health benefits of changing the lifestyles...
5. The Nurse Management Staff audits the charts at the end of the day to make certain that this has been done. A 95% effectiveness is the standard for determining success.

In addition:

6. Patients who decide to change their health and their future will be referred to SETMA's Education Department for dietary education for weight management, diabetes, cholesterol, hypertension, the metabolic syndrome and other conditions where improvement is dependent upon patient dietary compliance.
7. Patients who are serious will be referred to SETMA's weight management clinic which has a proved record in helping patients... Utilizing the Adult Weight Management program published by the AMA, SETMA's electronic version of this excellent tool is used to assist patient's in achieving their weight reduction goals.
8. Patients who are serious about cardiac and pulmonary conditioning can be referred to SETMA's cardiopulmonary rehabilitation program for assistance and guidance in that process.

Rationale for LESS Initiative

Lose Weight

The first element of LESS is "lose weight." In September, 2004, the *Journal of the American Medical Association (JAMA)* published two articles on the benefit of nutrition and weight reduction. The first addressed the health benefits of weight reduction in the

elderly, those between 70 and 90. This study, which was done in European, showed the following results:

"During the 10-year follow-up, men and women between the ages of 70 and 90 years who had adhered to a Mediterranean diet (with resultant weight loss), were nonsmokers or had stopped smoking more than 15 years ago, were physically active, and used alcohol moderately (wine), had less than half the mortality rate from all causes, CHD, CVD, and cancer than those who did not."

The second study concluded:

"...both physical activity and BMI play important roles in the development of type 2 diabetes & The magnitude of the association with diabetes risk was much greater for BMI than for physical activity. These findings underscore the critical importance of (body fat) as a determinant of type 2 diabetes & to further reduce the risk of diabetes with physical activity, it should be performed in conjunction with achieving weight loss."

Weight Loss benefits health

There is no doubt that losing weight benefits your health. But, the reality is that you do not have to achieve your ideal body weight in order to make a difference in your health. A 5 to 10% decrease in body fat will begin to improve your health, no matter how overweight or obese you are. This column has repeatedly addressed this issue. The following articles are available on *The Examiner*'s website (www.theexaminer.com) or on SETMA's website (www.jameslhollymd.com):

- January 23, 2002 Overweight and Obesity -- This article summaries the National Institutes of Health's report on obesity
- July 27, 2002 Obesity-- This article addresses the diseases associated with obesity.
- July 24, 2003 Childhood Nutrition -- This article addresses childhood obesity and points out that childhood obesity doubles the risk for adult obesity.
- January 13, 2004 Aging Well Part VIII Body Composition -- This article gives definitions for BMI, BMR and other aspects of measuring your body's shape and its health-risk implications.
- January 29, 2004 Sugar Salts and Saturated Fatty Acids: The Mediterranean Diet

Exercise

The second element of LESS is exercise. Commonly, we associate this with going to the gym, or structured, formal working out. Actually, it is much more than that. Exercise which benefits your health is not necessarily participation in competitive sports or a work-out regimen. It does mean that you are active. For those whose job has them moving all day, they may get in 10,000 steps a day and find it unnecessary to add additional exercise to achieve good health. For those whose job has them sitting at a desk

all day, they will have to walk, jog, cycle, swim or in some other way get their exercise to stay fit.

Another recent study in *JAMA*, which examined the relationship of obesity and physical exercise in women with coronary artery disease, reached the following conclusion:

"Among women...(Obesity) was not independently associated with (heart disease). However, lower self-reported physical fitness scores were associated with higher prevalence of (heart disease)&These results suggest that fitness may be more important than overweight or obesity for (heart) risk in women. Evaluation of physical activity and functional capacity using simple questionnaires should be an integral part of (heart disease) risk (assessment) and interventions aimed at increasing physical fitness levels should be included in the management of all women at risk for (heart disease)."

Getting people moving, no matter what their current condition, will benefit them. People with severe congestive heart failure especially benefit from cardiopulmonary rehabilitation.

Stopping Smoking

In the September 9, 2004, *Your Life Your Health*, we discussed the health risks of "[not smoking but inhaling](#)." A puff of smoke has several billion free radicals – destructive, highly active particles which damage your body and health. Whether you inhale while smoking, or being around someone who does, it damages your health.

The good news is that it is never too late to stop. Even those with emphysema and shortness of breath will benefit from stopping smoking. As part of SETMA's **LESS Initiative**, in addition to confronting smokers with the need to stop, and giving them information and/or medication to help with the process, SETMA providers will create an electronic tickler file in order to remind themselves to call the patient in one month to see if they have successfully stopped.

SETMA's goal is to have a smoke-free practice. While we may never totally achieve that, it will be our goal nonetheless. As for smokers who are irritated with this focus, we encourage them to realize that our confronting of them is out of caring. We are no longer going to passively conspire with a self-destructive habit; we are going to actively help all of our patients get healthy and stay that way.

The future of LESS Initiative

Since our beginning this initiative in December 2004, thousands of people have been confronted with their need to lose weight, exercise and stop smoking. Hundreds have benefited and have sustained those benefits. The Initiative has changed the quality of healthcare counsel SETMA's patients receive every time they come to the clinic. Remember, it is your life and it is your health. We care and so should you.

