Cardiac Healthy Weight DNA Insight®

PERSONAL GENETIC REPORT

Protected Health Information
**Personal Details**

Name: SAMPLE PATIENT  
DOB: Jan 1, 19XX  
Gender: Female  
Ethnicity: Caucasian  
Report Date: Nov 12, 2015  
Received Date: Nov 2, 2015

**Test Performed / Method**

Genotyping by array-based evaluation of multiple molecular probes

**Ordering Healthcare Professional**

Nilesh Dharajiya, M.D.  
4755 Nexus Center Drive  
San Diego, CA 92121 US

**Laboratory Info**

Accession #: F7715014  
Activation Code: ABCDE-ABABA  
Specimen Type: Saliva  
Collected Date: Oct 29, 2015

**Test Results Reviewed & Approved by Laboratory Director**

Nilesh Dharajiya, M.D.

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**SCIENTIFIC STRENGTH RATING SYSTEM**

The genetic markers and studies selected for this report represent the best and most recent genetic research in diet, nutrition, exercise, weight-related health conditions and medication response. Some research can be described as stronger than others based on the size of the population studied and whether the outcome has been replicated. Due to the current state of scientific research on the genetics of diet, exercise and nutrition, most of the studies referenced in your report are based on individuals of Caucasian ethnicity. While we all have the same genes, there are genetic and non-genetic factors in different ethnicities that might yield different outcomes for non-Caucasian populations. Your report includes a star system (in applicable sections), described below, to rate the strength of the research evidence for the genetic marker and the associated result. The star rating is not applicable for your health conditions and drug response sections. However, the genetic markers and studies used to report these conditions are based on the most accepted scientific information in the field.

★★★★

Results derived from a large study of approximately 2,000 or more people, with at least one additional study showing the same results (replication study).

★★★★

Results derived from a moderately-sized study of at least 400 people, with or without a replication study.

★★★★

Small study of less than 400 people in some cases, with other small replicated studies. Results in this category are preliminary, but pass our criteria for statistical significance.

★★★★

Results in this category should be considered extremely preliminary.

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**Disclaimer**

This test was developed and its performance characteristics determined by Pathway Genomics Corporation. It has not been cleared or approved by the FDA. The laboratory is regulated under CLIA as qualified to perform high-complexity testing. This test is used for clinical purposes. It should not be regarded as investigational or for research.

If you have any questions about this report or wish to speak with one of Pathway Genomics’ genetic counselors, please call (877) 505.7374.
Eat a diet low in carbohydrates, particularly refined carbohydrates, instead of a low fat, Mediterranean or other diet.

Carbohydrates are not just in pasta and bread, but are sometimes in foods you don't expect. Be sure to review nutritional labels for carbohydrate content.

Your genotype is associated with increased benefits from polyunsaturated fats. Replace saturated and trans (hydrogenated) fats, such as butter, lard and margarine, with polyunsaturated fats, such as vegetable oil, nuts, seeds, as well as some fish, in your diet.

There is new technology that can help you plan and track your diet. There are applications online or available on smart phones that can make it easier to stay on a diet.

You have a genetic variant associated with lower vitamin B6 levels. Be sure your diet includes foods rich in vitamin B6, such as dark green leafy vegetables, whole grains, legumes, poultry, fish and eggs.

You have a genetic variant associated with lower vitamin B12 levels. Be sure your diet includes foods rich in vitamin B12, such as meat, fish, poultry and milk products. You can also obtain B12 from fortified foods and vitamin supplements.

You have genetic markers associated with slower conversion of beta-carotene to vitamin A. You may need additional servings of carotenoid-rich foods, such as dark green leafy vegetables and orange vegetables and fruits.
## YOUR MATCHING DIET

<table>
<thead>
<tr>
<th>Item</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matching Diet Type</td>
<td>LOW CARB DIET</td>
</tr>
<tr>
<td>Response To Monounsaturated Fats</td>
<td>NEUTRAL</td>
</tr>
<tr>
<td>Response To Polyunsaturated Fats</td>
<td>INCREASED BENEFIT</td>
</tr>
<tr>
<td>Omega-6 And Omega-3 Levels</td>
<td>TYPICAL</td>
</tr>
</tbody>
</table>

## NUTRITIONAL NEEDS

<table>
<thead>
<tr>
<th>Vitamin</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>B2</td>
<td>STAY BALANCED</td>
</tr>
<tr>
<td>B6</td>
<td>OPTIMIZE INTAKE</td>
</tr>
<tr>
<td>B12</td>
<td>OPTIMIZE INTAKE</td>
</tr>
<tr>
<td>A</td>
<td>OPTIMIZE INTAKE</td>
</tr>
<tr>
<td>C</td>
<td>STAY BALANCED</td>
</tr>
<tr>
<td>D</td>
<td>STAY BALANCED</td>
</tr>
<tr>
<td>E</td>
<td>STAY BALANCED</td>
</tr>
</tbody>
</table>

## EXERCISE

<table>
<thead>
<tr>
<th>Exercise Response</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight Loss</td>
<td>EXERCISE STRONGLY RECOMMENDED</td>
</tr>
<tr>
<td>Blood Pressure</td>
<td>EXERCISE STRONGLY RECOMMENDED</td>
</tr>
<tr>
<td>Loss Of Body Fat</td>
<td>NORMAL BENEFIT</td>
</tr>
<tr>
<td>Insulin Sensitivity</td>
<td>ENHANCED BENEFIT</td>
</tr>
</tbody>
</table>

## YOUR BODY AND WEIGHT

<table>
<thead>
<tr>
<th>Condition</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obesity</td>
<td>AVERAGE</td>
</tr>
<tr>
<td>Adiponectin Levels</td>
<td>POSSIBLY LOW</td>
</tr>
</tbody>
</table>

## HEALTH CONDITIONS

<table>
<thead>
<tr>
<th>Condition</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes, Type 1</td>
<td>AVERAGE RISK</td>
</tr>
<tr>
<td>Diabetes, Type 2</td>
<td>AVERAGE RISK</td>
</tr>
</tbody>
</table>
PERSONALIZE YOUR DIET WITH GENETICS

The way we eat, how our bodies process foods, and our overall health are impacted by our genetics. Scientific studies have shown that genetics can also be important for diet effectiveness. Your results have been calculated to determine the best diet likely to help you optimize your metabolism, lose weight and improve your health.

YOUR RESULTS

- MATCHING DIET TYPE:
  - LOW CARB DIET (page 7)
- RESPONSE TO MONOUNSATURATED FATS:
  - NEUTRAL (page 10)
- RESPONSE TO POLYUNSATURATED FATS:
  - INCREASED BENEFIT (page 10)
- OMEGA-6 AND OMEGA-3 LEVELS:
  - TYPICAL (page 11)
The scientific studies referenced in this report are provided below and can be referenced at www.pubmed.gov. All of these papers were published in peer-reviewed journals. PubMed is a service managed by the National Institutes of Health (NIH), a part of the U.S. Department of Health and Human Services, and it tracks more than 19 million citations for biomedical articles and scientific research.


10. Simopoulos AP. The Importance Of The Omega-6/omega-3 Fatty Acid Ratio In Cardiovascular Disease And Other Chronic Diseases. *Experimental Biology And Medicine (Maywood, N.J.)* 233, 674-88 (2008).


Risks & Limitations

Risks

Risk of Laboratory Error

Pathway is a certified laboratory under the federal Clinical Laboratory Improvement Amendments of 1988 (CLIA) with standard and effective procedures in place for handling samples. However, laboratory error can occur, which might lead to incorrect results. Examples include, but are not limited to, a sample or DNA mislabeling or contamination, failure to obtain an interpretable report, and any other operational laboratory error. I understand that sometimes Pathway’s laboratory may need a second sample to complete my testing.

Risk of laboratory technical problems

Pathway’s CLIA-certified laboratory also has standard and effective procedures in place to protect against technical and operational problems. However, such problems may still occur and examples include, but are not limited to, failure to obtain an interpretable result for a particular SNP. Sometimes it is not possible to obtain a testing result for a particular mutation or marker due to circumstances beyond Pathway’s control, in which case it may not be possible for Pathway to conclusively report on a genetic change that might cause or be predictive of a condition. This may mean that Pathway cannot report my results for a particular health trait or condition, carrier status result, drug response, or other phenotype. Pathway may re-test my sample in order to obtain these results, but upon re-testing the results may still not be obtained. As with all medical laboratory testing, there is a small chance that the laboratory could report false positive or false negative results. A false positive result means that a genotype is reported as being present when it is actually not present. A false negative result means that a genotype is not reported as being present when it actually is present. A tested individual may wish to pursue further testing to verify any results.

Limitations

The purpose of this test is to provide information about how a tested individual’s genes affect their metabolism, weight, exercise, energy use, eating behavior, diet and nutritional choices. Tested individuals should not change their diet, physical activity, or any medical treatments they are currently using based on genetic testing results without consulting their personal health care provider.

Tested individuals may find that their experience is not consistent with Pathway’s selected peer-reviewed scientific research findings of relative improvement for the study group(s). The science in this area is still developing and many personal health factors affect diet and health. Since subjects in the scientific studies referenced in this report may have had personal health and other factors different from those of tested individuals, results from these studies may not be representative of the results experienced by tested individuals. Further, some recommendations may or may not be attainable, depending on the tested individual’s physical ability or other personal health factors. A limitation of this testing is that most scientific studies have been performed in Caucasian populations only. The interpretations and recommendations are done in the context of Caucasian studies, but the results may or may not be relevant to tested individuals of different or mixed ethnicities.

The association between genetic mutations and the information within this report is an active area of scientific research, and future scientific discoveries might alter our understanding of how this information is related to your diet, nutrition, and exercise.

Based on test results and other medical knowledge of the tested individual, health care providers might consider additional independent testing, or consult another health care provider or genetic counselor.
### Result Status Definitions

<table>
<thead>
<tr>
<th>Status</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amended</td>
<td>Test results and/or patient information that have been revised in a way that does not impact the clinical significance of the result(s) and/or patient diagnosis, treatment or management.</td>
</tr>
<tr>
<td>Corrected</td>
<td>Test results and/or patient information that have been revised in a way that may impact the clinical significance of the result(s) and/or patient diagnosis, treatment or management.</td>
</tr>
<tr>
<td>Final</td>
<td>Test results that are available at the time of report issue or have been revised from pending status to final status.</td>
</tr>
<tr>
<td>Pending</td>
<td>Test results that are not available at the time of report issue. All pending results will be specified in the report.</td>
</tr>
</tbody>
</table>
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