



Interview on Nutrigenomics Industry

TechSci Research
Analysts in
Conversation with:

Ron Martin

(Founder at Nutrigenetics
Unlimited, Inc.)



How is your Work related to Nutrigenomics?

I have completed my BS and MS degrees in Food Science and Nutrition from Chapman University, in Orange, California. I worked for more than 35 years in the dietary supplement and food-related industries, mostly at Nutrilite (in Buena Park, California) where I served as Senior Research Scientist in their Nutritional R&D and Product Development departments.

While at Nutrilite, I became fascinated with genetics in nutrition after attending both the first and the second international conferences on nutritional genomics that were held in 2002 and 2003 in the Netherlands, and organized by NuGO. After attending these conferences, it became clear to me that differences in genetics might well explain why some people respond favorably to dietary supplements, while some do not respond at all. When I looked in the medical literature for more about nutritional genomics, I found that inconsistent terminology makes it very difficult to find the relevant research articles.

For that reason, I had made it my ongoing "mission" to make nutritional genomics more readily accessible to anyone, and everyone, including to members of the Public – which includes students, as well as educators.

With that aim in mind, in early 2007 I founded the online database at Nutrigenetics.net -- which is free for everyone to use on weekends (Pacific US time). In 2007 I also became one of the original members of the International Society of Nutrigenetics & Nutrigenomics (NutritionAndGenetics.org), and attended most of their past Congresses, most recently their 15th Congress which was held in Monterrey, Mexico.

As you mentioned, you have founded a database can you please tell more about it?

The database at Nutrigenetics.net was originally aimed at nutritional genomics, it became apparent that nutrition (and diet generally) will overlap with many other genomics-related topics to one degree or another. For that reason, the Nutrigenetics.net database is continuously expanding in an ongoing effort to include most of the omics-related PubMed articles that may be relevant to human health, and it currently contains more than 2 million records that are also present on PubMed. But unlike PubMed, the Nutrigenetics.net database further indexes those article records with standardized terminology (controlled vocabulary). This allows database users to create their own customized lists of subtopics (indexes) for any given topic, or for any given combination of topics, including for genes and genetic variants.

This ability of database users to create their own customized subtopic listings (indexes) is important because it allows users to clearly view (or even discover) many of the otherwise hidden or obscured relationships, including which genes and genetic variants are being discussed.

If someone conducts a search on PubMed for nutrigenetics or nutrigenomics (per se), the number of article records retrieved will be relatively small. However, if a wider net is cast for omics-related articles in combination with articles which also mention any diet-related words like curcumin, or



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resveratrol, etc., then the number of PubMed records retrieved becomes impressive. This is the approach that is used for the database at nutrigenetics.net, which has identified nearly 170,000 PubMed records which are relevant to nutrition or diet for the years 2000 to the present. The database at Nutrigenetics.net does indeed contain a little over 250,000 PubMed articles that are relevant to nutrition.

However, only 170,000 of those 250,000 were validated today as also referring to a gene or a genetics-related term (the other 80,000 pertain to things like Alzheimer disease or Cardiovascular Diseases or Neoplasms, but are more difficult to validate as being clearly related to genetics or the various omics).

Moreover, there's an important advantage to using "nutrition" as a catch-all umbrella for all diet-related articles within the Nutrigenetics.net database.

The advantage is that when an index of subtopics is created where "nutrition" is included as an index or search topic, then essentially all of the more-specific diet-related subtopics like curcumin, or resveratrol, etc., will appear in the subtopic listings – which are otherwise easily overlooked, especially when a large number of articles are involved.

By systematically creating subtopics listings (first for one topic, then for combinations of topics which are of interest to the user), these otherwise easily-overlooked relationships become visible – including the genes and genetic variants which are also mentioned within those same PubMed records.

We are no longer living in a world where the old approach of "one size fits all" is adequate, and this is why personalized healthcare (sometimes also called "precision healthcare" or even "precision medicine") has been emerging – and will continue to emerge.

Can you elaborate the use of nutrigenomics in the treatment or management of different diseases.

Yes, nutrigenomics is used in the treatment and management of diseases but beyond treatments, another opportunity which is clearly emerging is "prevention" of health conditions for which at least some patients are genetically predisposed, and where changes in "environment" (including diet) may forestall, or at least mitigate, the development of both physical- and mental-health problems such as depression, anxiety, and more.

What forms an integral part of nutrigenomics products such as vitamins & supplements, probiotics, prebiotics, or nutrigenomics genetic testing?

Regarding commercialization of nutritional genomics, I am fully persuaded that product like dietary supplements, including probiotics and prebiotics, can play an important role, but it's a matter of what's appropriate for the individual – which can be difficult for members of the public to discern without the

appropriate tools, and without cooperation with healthcare professionals who are knowledgeable.

How has the scenario for nutrigenomics changed over the years? Has the demand increased or decreased?

Over the years if I talk in terms of literature, earlier there was a lack of information available related to nutrigenomics and now there is an overload of information. So, both a lack of information and now some overload of information helps explain the relatively slow uptake and "translation" of the emerging information into practical healthcare uses. And this slow uptake is further complicated by "standards of practice" that apply to various health services for the treatment of common health conditions. Clearly, more efforts are needed to build consensus about adding more omics-related considerations to standard treatment protocols.

After all, when patients do not respond to a given standard of practice, then there is already a growing opportunity (even duty) to look for better approaches that could include more omics-related considerations.





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