

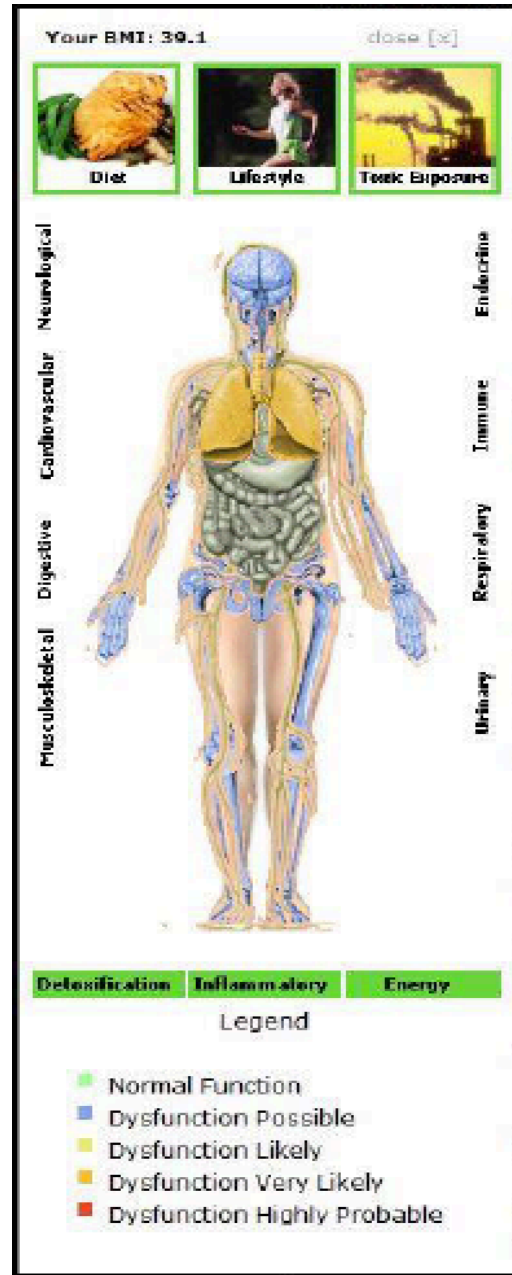
Simplifying Treatment Protocol Development with.....

ARTIFICIAL INTELLIGENCE

100,000,000 Possible Combinations
250,000 Medical Studies
30,000 Clinical References
13,000 Key Calculations



1 UNIQUE RECOMMENDATION



By Healthy at Work and SaluGenecists

Artificial Intelligence for Healthcare: Why the Functional Medicine Model is Much Better.

There is increasing interest in the development and use of artificial intelligence technology to help improve health. Unfortunately, most of these efforts will not be successful because they are dependent on a flawed conventional medicine system that treats and manages symptoms. Since more than eighty percent of chronic illness is preventable this symptoms-based approach will not work because the human body works as a whole system and is not able to be corrected by addressing one symptom with conventional therapies such as prescription medications. Also, about eighty percent of these conventional medicine treatments are not based on good science, which casts doubt on their ability to even treat the symptoms with any long-term effectiveness. Side effects for these treatments are well known and cast further doubt on the ability of any artificial intelligence platform to consistently improve the results that are hoped for.

On the other hand, an artificial intelligence platform based on functional, or natural medicine, has been shown to be safer, more effective and less costly due to its ability to diagnose the root cause of chronic illness sooner and treat those root causes with safer more effective natural protocols based on excellent scientific evidence. Here are the major elements of this AI platform that has been working for the past ten years with over 20,000 people.

1. This platform has more evidence-based information than any other AI platform ever developed. It uses proven algorithms to produce timely and effective diagnosis and treatment protocols.
2. Each of the twenty modules in this platform are completely integrated with their algorithms to produce a valid point system evaluation for each user, as well as a human body picture to illustrate exactly where the diagnosis is located and where the treatment effectiveness will occur. These measurement components will allow for a timely and accurate assessment of the changes being made by each individual, which in turn allows for an accurate assessment of the health improvements and cost reductions being accomplished.
3. A series of Smart Tools are used to identify each individual's underlying physiological dysfunctions and the steps necessary to eliminate them. This is possible due to the use of probabilistic reasoning based on evidence-based, peer reviewed research, and the successful use of this research on over 20,000 users. A series of 50 to 100 questions, along with blood tests, are used to create a map of each person's metabolic and functional needs, ranked by probability, as well as the impact on their health.
4. The diet analysis tool tracks the health influence of 138 different nutrients to determine how many of them and how much of them are present based on a nutrient survey. It also considers the presence of these nutrients in local soils, as well as the presence of 175 different pesticides or toxins such as heavy metals and synthetic chemicals in the foods we are eating. This information is based on reliable data bases from the

Environmental Protection Agency and the United States Department of Agriculture in all of the postal zip codes in the country.

5. The Diet Analysis Tool information is then combined with a special genomic test with predictive analysis capabilities in order to factor in the impact of existing dietary factors on any genetic predispositions present. This allows for an accurate evaluation for the probability of damage to the individual's DNA or chromosomes. This damage is called SNP's or Single Nucleotide Polymorphisms. If any existing, or probable SNP's are found, then specific detoxification and cell rebuilding protocols can be recommended. This can include things like saunas or nutritional changes to assist the detoxification and the cellular repair process. Results can be monitored with the Health Risk Assessment surveys used as well the blood tests that are repeated each year to determine ongoing health status.
6. A series of customized Knowledge Solutions are also developed giving each individual excellent assistance in the recommended lifestyle changes prompted by the AI platform. These usually include;
 - a. Recommendations on dietary changes based on whole food solutions
 - b. Recommendations for the use of nutritional supplements from a Nutritional Supplements Data Base created from independent research on 200 nutritional ingredients and over 600 related constituent factors in order to optimize the effectiveness and safety of any supplements recommended.
 - c. Specific disease evaluation protocols based on the best available integrated medical research applied to each individual. These protocols are applied based on the individual Health Risk Assessment information, blood tests and genomic testing for each individual. The efficacy of these protocols is verified through the comparison of overall clinical study results from Pub Med and the consistency of benefit analysis of over 20,000 current users of this platform.

The current modules within this AI platform are as follows:

Living with Conditions

These assessments act as quick recommendation engines for people suffering from one of the listed conditions. They can act as part of a larger dive into the tool, or as stand-alone assessments. 30 other diseases have been researched and can be converted to modules according to client needs.

- Asthma
- Cardiovascular disease
- Diabetes
- Headache
- Hypertension
- Chronic inflammation
- Metabolic syndrome
- Osteoporosis

This category averages 8 pages per condition, and has an average of 5 questions per page.

Health Risk Assessments

These questionnaires are meant to predict current or future health risks. They can act in combination with a comprehensive assessment or as stand-alone tools.

- Alzheimer's disease
- Breast cancer
- Colon cancer
- Diabetes
- Heart attack
- Lead exposure
- Lung cancer
- Major depression
- Mercury exposure
- Osteoporosis-related fracture
- Prostate cancer
- Stroke

This category averages 6 pages per assessment, and includes an average of 5 questions per page view.

Laboratory Assessments

We currently have the following laboratory assessment pages, with an average of a single page a piece, and 4 questions per page. Panels include several associated tests.

- Adrenal function
- Autoimmune panel
- Bleeding time
- Bone mineral density
- Celiac disease
- Complete blood count
- Diabetes
- Genomics (see genomics report below)
- H. pylori
- Hepatitis
- Intestinal permeability
- Iron panel
- Lipids
- Liver panel
- Male and female hormones
- Nutrients
- Pregnancy
- Prostate
- Serum panel
- Thyroid panel
- Toxins (environmental)
- Abbreviated labs (VGA) – 10-12 more common tests

Comprehensive Assessment

The comprehensive assessment is built from seven separate assessment questionnaires

- My health score
- My conditions
- My symptoms
- My lifestyle
- (My diet)
- My prescription medications
- My over-the-counter medications

These average 3 pages per assessment, and include an average of 10 questions per page (this average is brought up quite a bit by the medications pages, which each contain a large number of inputs)

As of 2016, we have replaced the medication pages with a searchable database, which includes generic & brand name drugs, both over the counter and prescription. Rather than scrolling through a list of unfamiliar names, this simplifies the process.

Proprietary Assessments

These are designed for specific clients to address needs of specific corporate or target sales populations. They are typically combinations of existing modules but custom modules are also available as needed to meet client priorities.

- Examples
 - Diabetes mellitus – a comprehensive assessment which includes both traditional risk factors and disease modifiers, as well as questions designed to elicit toxin exposure for those most closely linked to diabetes risk and progression
 - Toxin exposure – a 4-page intake including diseases/conditions linked to toxin exposure, along with dietary, environmental, and basic laboratory assessment of common toxins, including toxic metals, plasticizers, and persistent organic pollutants, etc.

Modifier Assessments

These are single page popup windows that help to differentiate physiology related to conditions and other significant inputs.

- Arthritis
- Asthma
- Back pain
- Congestive heart failure
- COPD
- Depression
- Diabetes
- Irritable bowel syndrome
- Menopause
- MI
- Migraine
- Osteoporosis
- Otitis
- PMS
- Pregnancy
- Psoriasis

- Renal disease
- Sleep
- Smoking
 - Non-smoking
- Stroke

Smart Questions & Smart Labs

These assessments are generated on the fly based on our proprietary algorithm. The assessment highlights questions likely to be influential on health risks or treatment recommendations, starting from most important and progressing to least important.

- Smart questions health history, signs, symptoms, conditions, lifestyle, etc.
- Smart questions recommended laboratory assessments

Diet Assessment

We have multiple versions of diet analysis, varying in depth of analysis and reporting. Each of these assessments interfaces with the AI engine, informing the comprehensive analysis.

- (living with Diet checkup: a seven-page stand-alone intake process **that drives to a report about specific dietary interventions** that would be most relevant.
- My Diet: a six-page diet assessment tool that is designed to work in the setting of the comprehensive history intake described above.

Goals

Several modules are available to facilitate behavioral change. Goals can be:

- Set
- Reminded by email (mobile in development) on a daily, weekly or monthly basis according to user choice
- Success tracked by email (mobile in development) response to reminders
- Results reported over days to several month histories

The approximately 80 different goals can be set in 3 areas:

- Health goals, such as blood sugar, weight, stress levels, etc.
- Lifestyle, such as exercise, meditation, not smoking, etc.
- Diet, such as increasing fiber, eating breakfast, avoiding sugar, etc.

Current Reports

My Comprehensive Final Report

Lists the top 5 recommendations by category (diet, lifestyle, nutritional supplements) along with food recommendations, recipes, and safety warnings. Each recommendation has an associated probability of being beneficial from 0 to 100%. Each recommendation also has associated content that can be accessed by following a link.

My Detailed Interventions Report

This report lists the top interventions in each category with a brief prompt, followed by a paragraph of descriptive content, and a clear action step. This report is written in simple declarative language, and can be printed or saved in .pdf format.

Achieving Balance Report

This report displays likely metabolic abnormalities in by category. These categories include metabolites, nutrients, microbes, food additives, and environmental toxins. Each item has deeper content accessible by link

My Disease Risk Report

This report compares the user to the average American with respect to the risk for 10 common diseases. Each of these risks can be explored further with linked content.

Living With Disease Report

This report is meant to give specific recommendations in the context of a specific disease condition. With structure / function language, the report explains why a recommendation is being made, and gives a simple action step with each recommendation. More complex recommendations have deeper content to guide action.

Health Risk Assessment Report

Each health risk assessment report lists the top items that are increasing and decreasing the risk of a particular condition. Each item has a paragraph of content explaining its relationship to disease risk, as well as deeper content searchable via link. Each item associated with increased risk is paired with an action step toward risk reduction.

Genomics Report

This report is available to customers who have had genomic data made available by 23andMe. The genotype of over 200 single nucleotide polymorphisms (SNPs) are extracted from the 23andMe database, with a report highlighting the impact of each of these SNPs, including body systems affected, potential disease risk associations, and relevant diet/lifestyle interventions. In addition to being available in the report, all the included SNPs are connected to the SG logic, with instantaneous updates to condition risk, important interventions, etc. Other laboratories that provide genomic data can also be linked to our system, though currently the process is only automated for 23andMe data.

Other Current Features

Menu Planner & Personalized Recipe and Foods

The personalized recipe and foods tool provides a short list of recipes, with full nutritional information, that are designed to best address the nutrient needs of each individual user. To make this tool practical and easy to use, it can be combined with our Menu Planning tool – this tool draws from a database of thousands of recipes, and allows for easy weekly/monthly planning of meals personalized to each user – it can be customized for specific preferences, such a vegetarian diet, gluten-free diet, Mediterranean diet, etc., with full nutritional information for each recipe and day.

Tracking Tools

As discussed under Goals above, Tracking tools allow for the set-up of email reminders toward a particular behavioral goal. By answering these emails, the user builds up a data set of compliance, which can then be viewed in graphic form. Companies can request a report on individual utilization of this feature as a way to track participation in wellness programs. Users can participate in this feature while keeping personal health history data from their employer.

Secure Socket Layer Sign-In

Use of SSL sign-in maintains data security to the current best net practice. User data is stored with a user key so that no data are stored tied to personally identifiable information.

Layered User Management

Our practitioner tools allow for multiple access points to the same user account. One might be a practitioner version with deeper content and greater ease of navigation. The same account data will be available for access remotely by patients. The patient version will have simpler content, and will allow for a more linear interface process. By allowing for multiple access points, both individuals and the doctors can keep records current.

Executive Reports

Executive reporting allows a corporate client to see the health data of their employee population in aggregate form. The data are broken down by overall risks, conditions, and diet/lifestyle patterns. Aggregate analysis can be used to target interventions across the employee population in a cost-effective manner. This report keeps individual data secure, and away from the eyes of the company.

Source of this information

This information is a summary of the information provided by Dr. Joseph Pizzorno the founder of SaluGenecists and Bastyr University, and was updated in April of 2017. This summary was written by Dr. Charles Bens from Healthy at Work, who is licensed to market this AI Platform. The summary was written on August 20, 2017.