

CLAIMS

We claim:

1. A system for analyzing biological data comprising:
a computer with memory having a reference genome database, operable as a baseline dataset, comprising biological data of part of all of the genome of a subpopulation and essentially free of genetic variations known to cause dominant monogenic, polygenic, or multifactorial diseases;
a computer with memory having a personal genome comprising biological data of part or all of an individual; and
a computer configured to:
 compare the sequence of said personal genome, or part thereof, with the sequence of said reference genome for differences in a selected condition; and
 select one or more sensors operable to directly or indirectly measure one or more non-genetic factors expressed by or responsive to the selected condition.
2. The system of claim 1, wherein said biological data is selected from the group consisting of genomic sequence information, proteomic data, exome data, methylation data, mRNA expression data, metabolome data, microbiome data, mitochondrial sequence data and karyotype data.
3. The system of claim 1, wherein the computer configured to select one or more sensors is further configured to select a threshold value for said measured one or more non-genetic factors.
4. The system of claim 3, wherein said threshold value varies as a function of said genomic comparison.
5. The system of claim 3, wherein the computer configured to select one or more sensors is further configured to monitor sensor output value of the one or more sensors.

6. The system of claim 3, wherein the computer configured to select one or more sensors is further configured to present an alert on an out of bound threshold condition.
7. The system of claim 3, wherein the computer configured to select one or more sensors is further configured to present a comparison of a periodic sensor output with said threshold value.
8. The system of claim 1, wherein said selected condition is selected from known monogenic diseases.
9. The system of claim 1, wherein said selected condition is selected from: likelihood of developing skin cancer, melanoma risk, heart attack risk, osteoarthritis risk, cardiac arrhythmias risk, weight gain predisposition, and deficient detoxification pathways.
10. The system of claim 1, wherein said selected condition is skin cancer and said one or more sensors include an ultraviolet sensor.
11. The system of claim 1, wherein said selected condition is vitamin D uptake and said one or more sensors include an ultraviolet sensor.
12. The system of claim 1, wherein said selected condition is heart attack risk or cardiac arrhythmias risk and said one or more sensors include a heart rate sensor.
13. The system of claim 1, wherein said selected condition is osteoarthritis risk and said one or more sensors include an accelerometer.
14. The system of claim 1, wherein said selected condition is athletic performance predisposition or weight gain predisposition and said one or more sensors include an accelerometer.