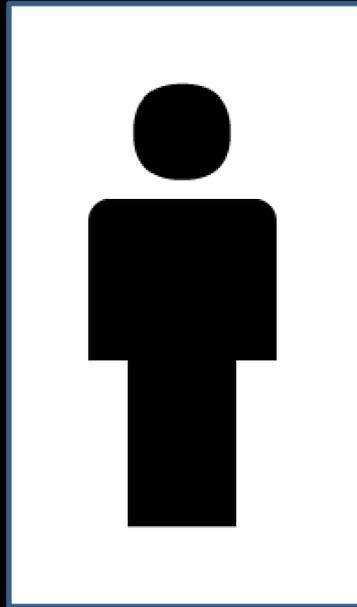




“Privacy is about  
context, social  
situations, and control.”  
- danah boyd



1. We are going to get our [genetic, health] data, one way or another.



but we often lack agency to decide what is done  
with data about us...



**Blue Button  
Download  
My Data**



# disease risk

Share my health results with family and friends

My Home

Inbox (5)

My Health

Disease Risk

Carrier Status

Drug Response

Traits

Health Labs

My Ancestry

Maternal Line

Paternal Line

Relative Finder

Ancestry Painting

Global Similarity

Ancestry Labs

Sharing & Community

Compare Genes

Family Inheritance

23andMe Community

Show results for [Redacted]

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23andMe Discoveries were made possible by 23andMe members who took surveys.

## Elevated Risk ?

Name	Confidence	Your Risk	Avg. Risk	Compared to Average
Prostate Cancer ♂	★★★★	31.9%	17.8%	1.79x
Psoriasis	★★★★	22.4%	11.4%	1.98x
Alzheimer's Disease	★★★★	14.2%	7.2%	1.98x
Ankylosing Spondylitis	★★★			
Asthma	★★★			
Bipolar Disorder: Preliminary Research	★★★			
Chronic Lymphocytic Leukemia	★★★			
Follicular Lymphoma	★★★			
High Blood Pressure (Hypertension)	★★★			

# Health Information Privacy

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[Civil Rights](#)

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[HIPAA Administrative Simplification Statute and Rules](#)

[Enforcement Activities & Results](#)

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## PSQIA

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[PSQIA Statute & Rule](#)

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[How to File a Complaint](#)

## Right to Access Medical Records

[If someone has health care power of attorney for an individual, can they obtain access to that individual's medical record?](#)

[Can the personal representative of an adult or emancipated minor obtain access to the individual's medical record?](#)

[How can family members of a deceased individual obtain the deceased individual's protected health information that is relevant to their own health care?](#)

[Does the HIPAA Privacy Rule allow parents the right to see their children's medical records?](#)

[If a child receives emergency medical care without a parent's consent, can the parent get all information about the child's treatment and condition?](#)

[Does the HIPAA Privacy Rule require a business associate to provide individuals with access to their protected health information or an accounting of disclosures, or an opportunity to amend protected health information?](#)

[What does the HIPAA Privacy Rule say about a research participant's right of access to research records or results?](#)

[Are the HIPAA Privacy Rule's requirements regarding patient access in harmony with the Clinical Laboratory Improvements Amendments of 1988 \(CLIA\)?](#)

[If patients request copies of their medical records as permitted by the Privacy Rule, are they required to pay for the copies?](#)

[Does the HIPAA Privacy Rule require that covered entities provide patients with access to oral information?](#)

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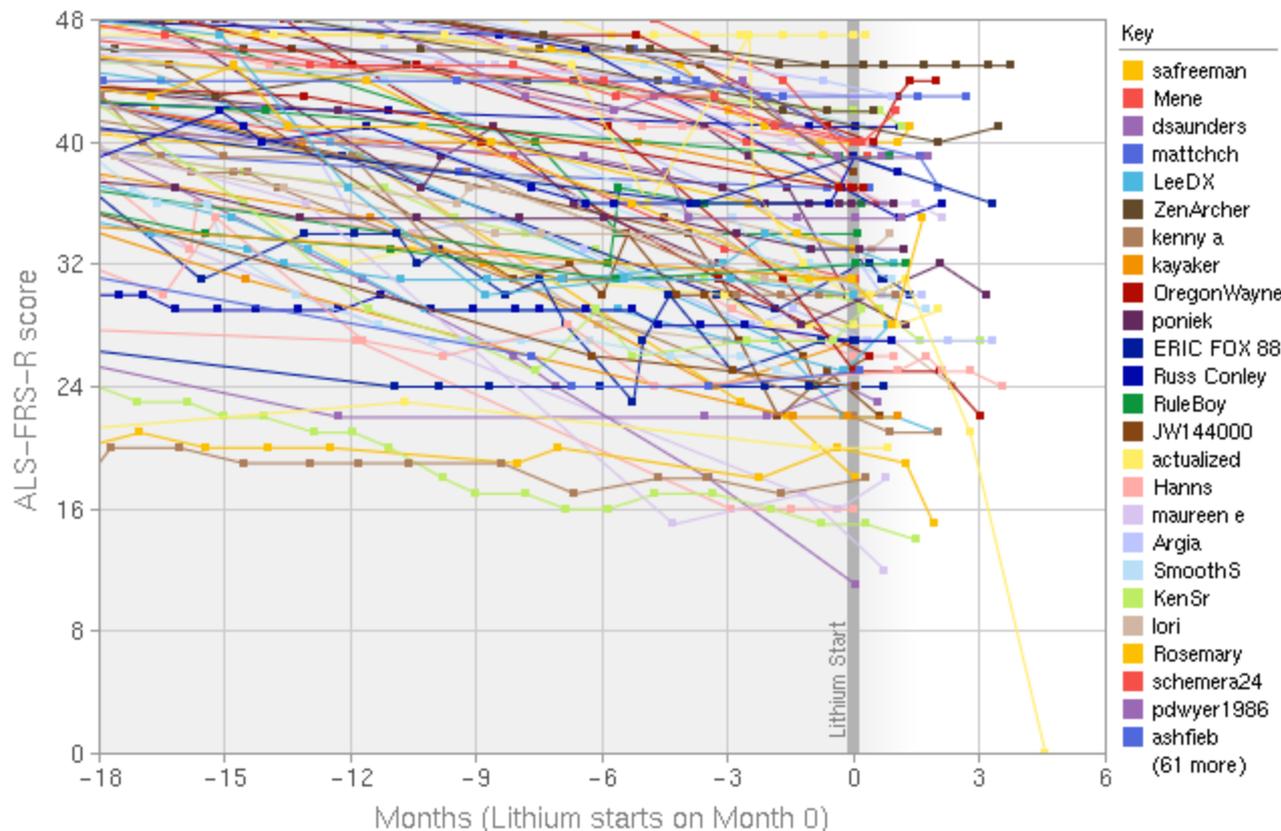
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(we are also going to talk about it)

### ALSFRS-R Progression of Patients on Lithium

This graph shows the ALSFRS-R scores of ALS patients in the PatientsLikeMe system before and after they started taking lithium. It is an evolving prototype that we are developing to help understand if lithium, and ultimately other treatments, can slow ALS progression. **Source:** [http://www.patientslikeme.com/als\\_lithium](http://www.patientslikeme.com/als_lithium)



**Filters:** All patients taking lithium

**Caveat:** This is a prototype that is attempting to display real-time effects of a treatment in the real world. In contrast to a well controlled double-blind placebo controlled trial, there are many variables, both known and unknown, that suggest significant caution should be used before drawing any conclusions from the results. Known unknowns include the possible effects of medication on the data, the effects of medication on the data, and the effects of medication on the data.



BLOG > E-PATIENT STORIES > MY FATHER'S MEDICAL RECORD FIASCO

## My Father's Medical Record Fiasco

e-Patient Dave | January 2, 2010

25

TOP ★5K

retweet

Like

3

Guest post by Alan Viars ([@Aviars](#)), CEO of Videnty Systems, Inc.



This past year my father required open heart surgery. This is a short article about the hurdles we (his family) encountered along the way. I've changed the names, because it is not my intention to embarrass particular hospitals or physicians. The issues I raise are systemic within the American healthcare apparatus. My objective is for you to get smart, get mad, and gain control of YOUR medical records.

In July 2009, my father, Charles, had a routine follow up with his primary care physician, "Dr. Smith." Dr. Smith told my father, "Well Charles, your EKG came back the same as last year: abnormal." "Abnormal? What?! Last year was abnormal, too? This is news to me!" My father was stunned.

"Well, you knew you had a heart attack, didn't you?" asked Dr. Smith. "I don't know anything unless you tell me!", my father told Dr. Smith. The doctor changed the subject to treatment: "Let's get you in to see a cardiologist."

Yes, that's right, my father unknowingly had had a heart attack even though he was regularly receiving medical care. A year prior his physician either didn't bother to look at the result of his

Welcome



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We're crowd-sourcing health discovery by helping anyone create group health studies.

We're in private beta. Want to join us?

Why do you want to join? What health questions do you want to answer?

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**“The Facebook of health science”**

**– Melanie Swan**





We take your health personally.

"I learned through my own experience with cancer that our current medical system is profoundly failing in its ability to deliver quality personalized medicine. The time has come to start the health care revolution."

— Dr. John Librett, President of Personalized Medicine

**Joining Personalized Medicine is like talking to all of the best doctors on the planet — say goodbye to wondering if you need a second opinion.**

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[info@medicineispersonal.com](mailto:info@medicineispersonal.com)

## Genomics

We start you off with a genotype test, to arm your doctor with extra insight into how your body works. Our genetic counselors are trained to help you and your doctor make the best use of this very newly

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## Ethics and Genomic Research: 'Genomethics'

31/01/2012

Categories: [ELSI](#) and [Guest Posts](#)

Written by [Katherine Morley](#) and [Guest Author](#)



*Dr Anna Middleton is an Ethics Researcher and Registered Genetic Counsellor, based at the [Wellcome Trust Sanger Institute](#). She leads the ethics component of the [Deciphering Developmental Disorders](#) study, a collaborative project involving WTSI and the 23 National Health Service Regional Clinical Genetics Services in the UK. This project*

*involves searching for the genetic cause of developmental disorders, using array-CGH, SNP genotyping and exome sequencing, in ~12,000 children in the UK who currently have no genetic diagnosis.*

### About

Genomes Unzipped is a group blog providing expert, independent commentary on the personal genomics industry.

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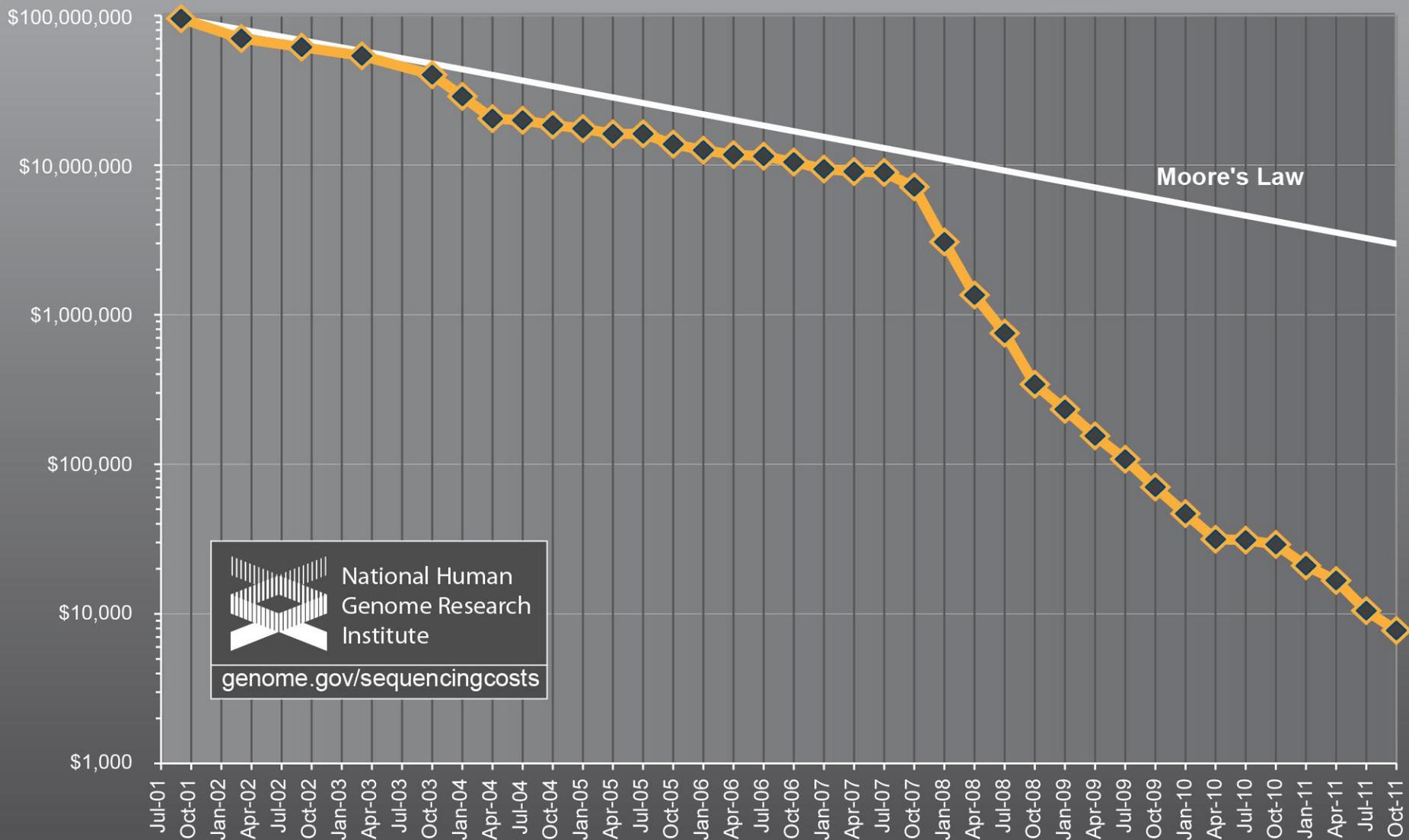
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[A personal view of genetic](#)

# Cost per Genome



 National Human  
Genome Research  
Institute  
[genome.gov/sequencingcosts](http://genome.gov/sequencingcosts)

in the future, anyone who wants a copy of your genome will probably be able to get it.

## 2. data

- > information

  - > knowledge

    - > wisdom

## ORIGIN

1 aaggaatgg agatccaaag gaaagcctga agcactttgt ggcttccacg ggttcgtttc  
61 taggaagcct ttgctttacc tggggaaacc ccaagctcta cagtgagaaa gttgtaaatt  
121 agcctttagg agacgctggt tgtcaaagtt atcttaaccc tggaaaaggg gagggaaaaa  
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1741 taaagtattt tcttgtttct aaaaatagcc aagtcttgca tattgactac atacctcaag  
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1861 tgatgaaatt tagtatagag aatagcatag tttataaact gatcagatgg aaacattgac  
1921 tcatgtaatt tgtttttttt tagtgaaaac aagtttatta gagaagtaaa gaaacaaaag  
1981 aatggctact ccatagacag agcagccgac tcatgtaatt ttttaacttc tacactgatt  
2041 tgaagcaactc ttgtctaaaa ccagcctttc ctcttgaggt ctaggatatt ttatttattt



Gene

Gene [Limits](#) [Advanced](#)[Display Settings:](#)  Full Report[Send to:](#) 

## CASP10 caspase 10, apoptosis-related cysteine peptidase [ *Homo sapiens* ]

Gene ID: 843, updated on 8-Jan-2012

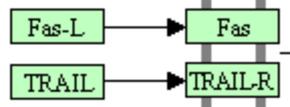
### Summary

<b>Official Symbol</b>	CASP10 <small>provided by <a href="#">HGNC</a></small>
<b>Official Full Name</b>	caspase 10, apoptosis-related cysteine peptidase <small>provided by <a href="#">HGNC</a></small>
<b>Primary source</b>	<a href="#">HGNC:1500</a>
<b>See related</b>	<a href="#">Ensembl:ENSG00000003400</a> ; <a href="#">HPRD:03458</a> ; <a href="#">MIM:601762</a> ; <a href="#">Vega:OTTHUMG00000132818</a>
<b>Gene type</b>	protein coding
<b>RefSeq status</b>	REVIEWED
<b>Organism</b>	<a href="#">Homo sapiens</a>
<b>Lineage</b>	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Euarchontoglires; Primates; Haplorrhini; Catarrhini; Hominidae; Homo
<b>Also known as</b>	MCH4; ALPS2; FLICE2
<b>Summary</b>	This gene encodes a protein which is a member of the cysteine-aspartic acid protease (caspase) family. Sequential activation of caspases plays a central role in the execution-phase of cell apoptosis. Caspases exist as inactive proenzymes which undergo proteolytic processing at conserved aspartic residues to produce two subunits, large and small, that dimerize to form the active enzyme. This protein cleaves and activates caspases 3 and 7, and the protein itself is processed by caspase 8. Mutations in this gene are associated with type IIA autoimmune lymphoproliferative syndrome, non-Hodgkin lymphoma and gastric cancer. Alternatively spliced transcript variants encoding different isoforms have been described for this gene. [provided by RefSeq, Apr 2011]

# APOPTOSIS

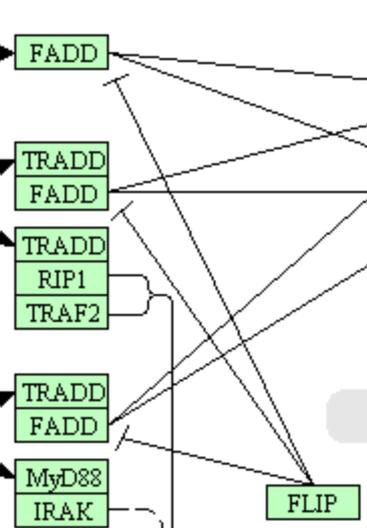
## Extrinsic Pathway

### Death Ligand

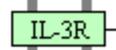
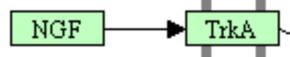


Cytokine-cytokine receptor interaction

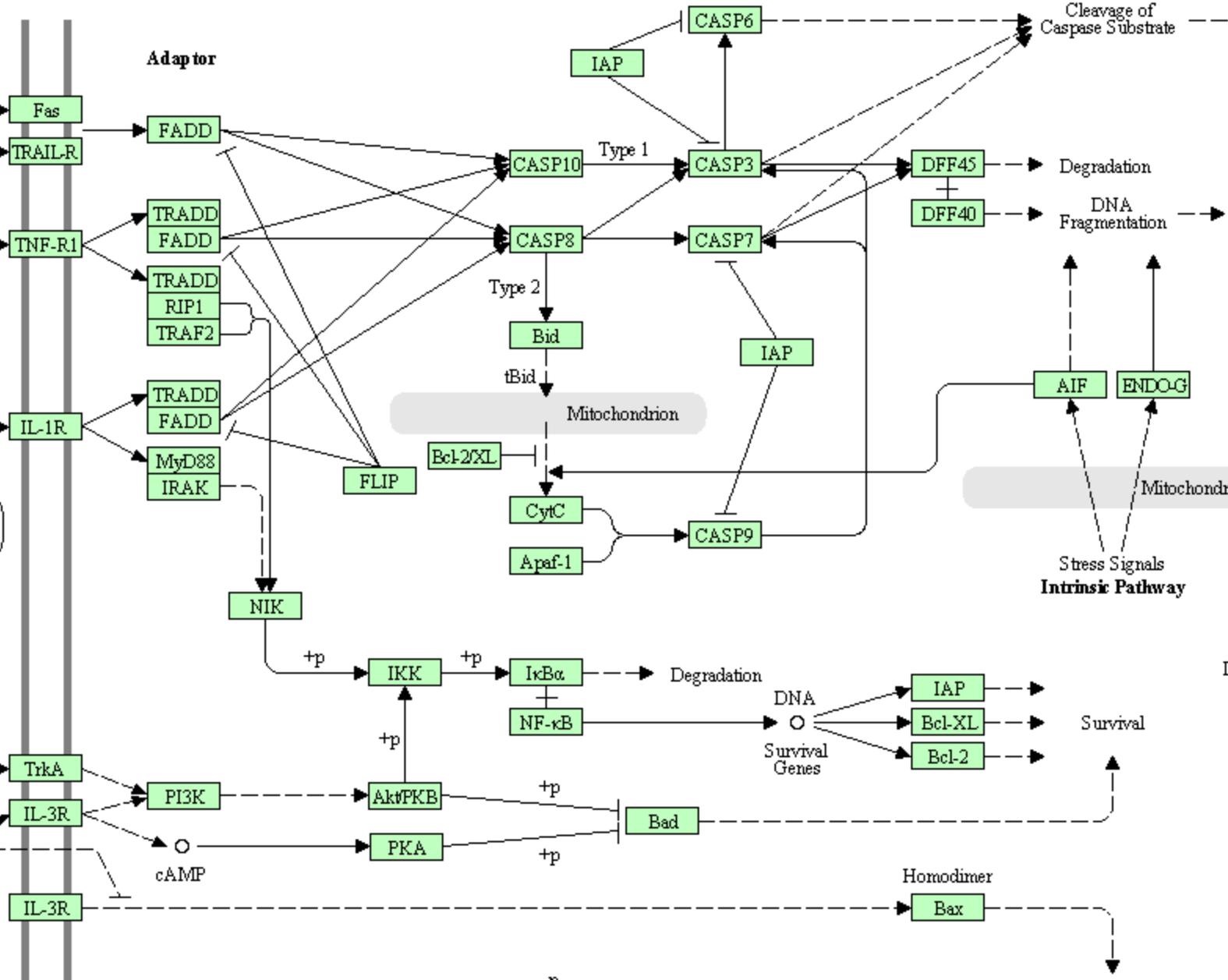
### Adaptor



### Survival Factors



## Ca<sup>2+</sup>-induced Cell Death Pathways



```

# This data file generated by 23andMe at: Thu Feb  2 09:45:37 2012
#
# Below is a text version of your data. Fields are TAB-separated
# Each line corresponds to a single SNP. For each SNP, we provide its identifier
# (an rsid or an internal id), its location on the reference human genome, and the
# genotype call oriented with respect to the plus strand on the human reference
# sequence. We are using reference human assembly build 36. Note that it is possible
# that data downloaded at different times may be different due to ongoing improvements
# in our ability to call genotypes. More information about these changes can be found at:
# https://www.23andme.com/you/download/revisions/
#
# More information on reference human assembly build 36:
# http://www.ncbi.nlm.nih.gov/projects/mapview/map\_search.cgi?taxid=9606&build=36
#
# rsid chromosome position genotype
rs4477212 1 72017 AA
rs3094315 1 742429 AA
rs3131972 1 742584 GG
rs12124819 1 766409 AA
rs11240777 1 788822 GG
rs6681049 1 789870 CC
rs4970383 1 828418 AC
rs4475691 1 836671 CT
rs7537756 1 844113 AG
rs13302982 1 851671 GG
rs1110052 1 863421 GT
rs2272756 1 871896 AG
rs3748597 1 878522 CC
rs13303106 1 881808 AG
rs28415373 1 883844 CC
rs13303010 1 884436 AA
rs6696281 1 892967 CC
rs28391282 1 894028 GG
rs2340592 1 900798 GG
rs13303118 1 908247 TT
rs6665000 1 914761 AA
rs2341362 1 917172 CC
rs9777703 1 918699 TT
rs1891910 1 922320 GG
rs9697457 1 924208 GG
rs35940137 1 930066 GG
rs3128117 1 934427 TT
rs2465126 1 936897 AA
rs2341365 1 938555 AA
rs15842 1 938784 CC
rs6657048 1 947503 CC

```

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Share as many phenotypes, characteristics and traits with other *openSNP* users and find others with similar characteristics. And maybe help scientists to discover new genetic associations.

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*openSNP* lets you share your stories on your genetic variations & phenotypes with others. Discover the stories of other users. Find others to exchange experiences about your variations.

### Find literature on genetic variation

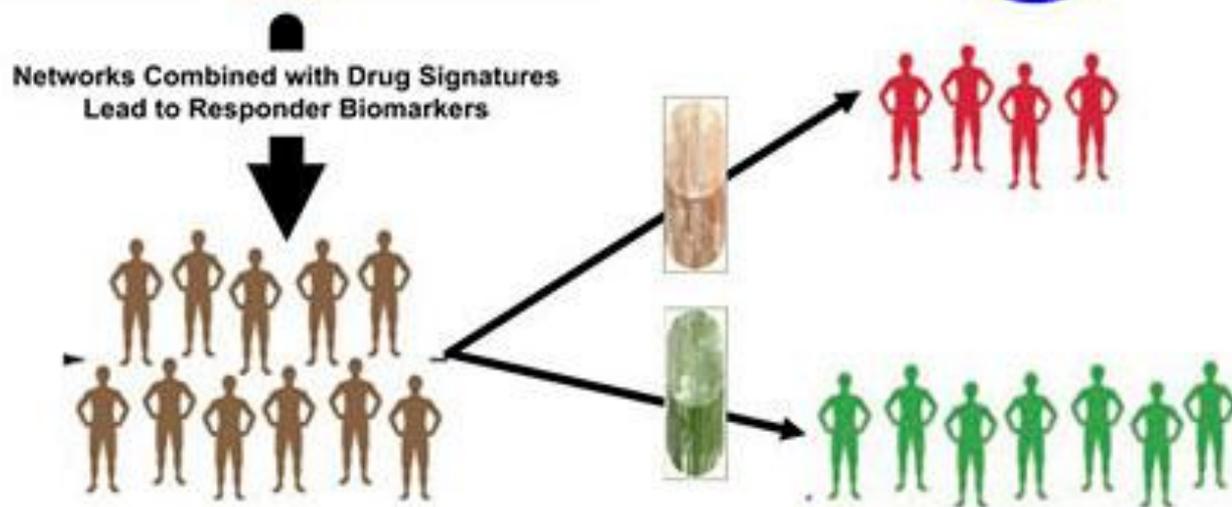
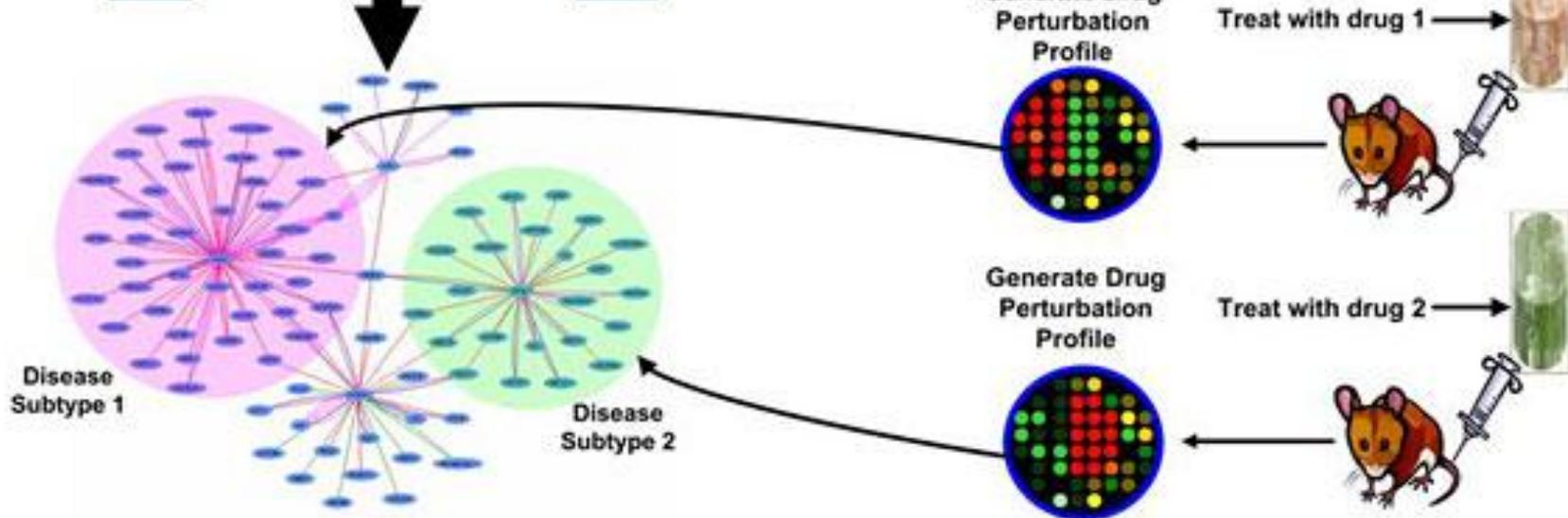
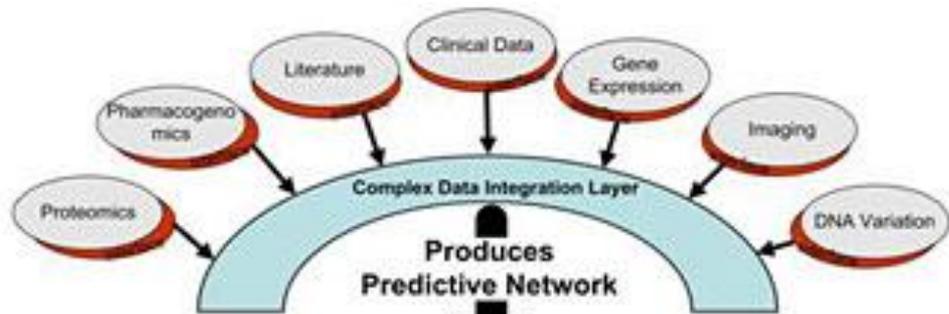


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how do we ensure our data gets  
turned into knowledge?



3. the infrastructure is just emerging.



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## 4 reasons patients aren't managing their care

12

“technology doesn’t support patient engagement”

outlines four reasons why patients aren't managing their healthcare.

**1. Patient engagement theories haven't been proven.** According to Krupa, being able to engage patients is a largely unproven theory. "And the second piece [is that] health plans will be able to reduce their costs and improve the usability of care that's out there," he said. "Generally, this idea has been proven difficult because, what we've found through research is, a majority of patients don't have interest in being engaged." Instead, Krupa continued,

CEOs in 2012

- 5 steps to consider for making the most of telehealth
- 6 points to note about the updated IRS healthcare reporting

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» [Learn more...](#)

### Development Update

Synapse is currently in Alpha development. This prototype has been developed to demonstrate our vision for the technology and solicit feedback from the community. The ability to create accounts and download Sage-hosted data is operational now. Some of the other functionality of the site is still under development.

### Call for ALPHA USERS

Are you interested in working with Sage to start a pilot project on Synapse? Please let us know at [synapseinfo@sagebase.org](mailto:synapseinfo@sagebase.org)

## Featured PROJECT

The Federation Aging project is exploring the large effect of age on human gene expression by exploring a set of genes whose expression levels are tightly associated with age.

» [Learn more...](#)

## Top Synapse CONTRIBUTORS



**Charles Sawyers et al, MSKCC**  
DNA copy number, mRNA expression profiles, candidate gene resequencing, and clinical traits from 218 prostate tumors.



**Amanda Myers, University of Miami**  
Genotypes, mRNA expression profiles, and clinical traits from 176 Alzheimer disease and 188 non-diseased brain samples.



**Beatriz Carvalho & Gerrit Meijer, VUMC**  
DNA copy number, mRNA expression, and tumor traits from 36 colorectal adenocarcinoma and 33 adenoma tumors.

» [See all contributors...](#)

## Example of an EXPERIENCE IN SYNAPSE:

75 x 75    75 x 75

**Browse datasets & projects** → **Download datasets** → **Upload your analyses** → **Upload your own dataset** → **Create a new project** → **Collaborate with other users** → **Discover new insights**

## Synapse NEWS

12-Apr-2011: A new analysis method for normalizing data was published by Brig Meacham. » [Learn more...](#)

08-Apr-2011: Eric Schadt and colleagues have published an article on a new model for diabetes. » [Learn more...](#)

## CONSENT TO RESEARCH

- BECOME AN ALPHA TESTER
- COMMON GENOMIC RESEARCH
- FREQUENTLY ASKED QUESTIONS
- GLOSSARY OF TERMS
- CONTACT US

Standard legal and technical systems for common genomic research and public genomic research.

Use the red arrows at the top of the panes to navigate.



VID



Post-launch chat on Consent to Research with John Wilbanks and Stephen Friend.

2 months ago

0 notes

TXT

## ALPHA TESTING

We're opening up for on why we're here at

**Systematic clinical** medicine. Despite all learn about biology a lines, or molecular treatment has to be t This is inherently r that somebody (or rea **Informed consent docu** patients understood before entering a cl. what the particular particular new therap aspect of informed co protection to patient

This system has worke becoming apparent tha is preventing scient. it could. The proble have tended to creat correctly defined the



Freedoms you are granting

- ✓ Right to do research with your data
- ✓ Right to redistribute your data
- ✓ Right to publish results of research from your data
- ✓ Right to commercialize products derived from research on your data

# my wish list

- Remove uncertainty, create incentives, training
- Safe harbor for IRB-approved experimentation with new models for consent (i.e. portable, fully identified, etc)
- Clear guidelines that harm lies in the act of reidentification, not act of distributing data with risk of reidentification (as long as done under safe harbor with consent)
- Matching grants for infrastructure (inarguable role for government)