



Incidental Findings & Direct-to-Consumer Genetic Testing

Gail Javitt

April 30, 2013

Overview

- Defining DTC Genetic Testing
- Current Regulatory Landscape
- Incidental Findings in DTC Genetic Testing

DTC Genetic Testing: Breaking It Down

- Direct to Consumer:
 - Consumer decides whether/what to order, requests the test, and receives results directly. Physician may or may not “order” the test as a formal matter.
 - Counseling may or may not be provided.
- Genetic:
 - May be single gene, multiples genes, SNPs, or sequencing
- Testing:
 - Laboratory analysis

- ❖ DTC = alternative means of marketing genetic testing services
- ❖ Any test that can be performed on blood spot or saliva sample can be provided DTC

Personal Genome Services

- Analyze 500,000-1,000,000 SNPs
- Identify variants associated with disease
- Calculate a set of disease risks based on variants present in customer's DNA
- Provide individualized report of customer's risk of developing specific diseases

Spectrum of DTC Genetic Testing



Fetal Gender



Inherited



Pharma



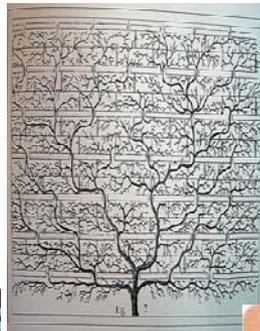
Complex Disorders



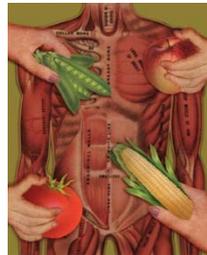
Preconception/
Carrier



Paternity



Ancestry



Nutrition



Athletic perf.



Obesity

Complex Conditions



Infidelity



Skin care

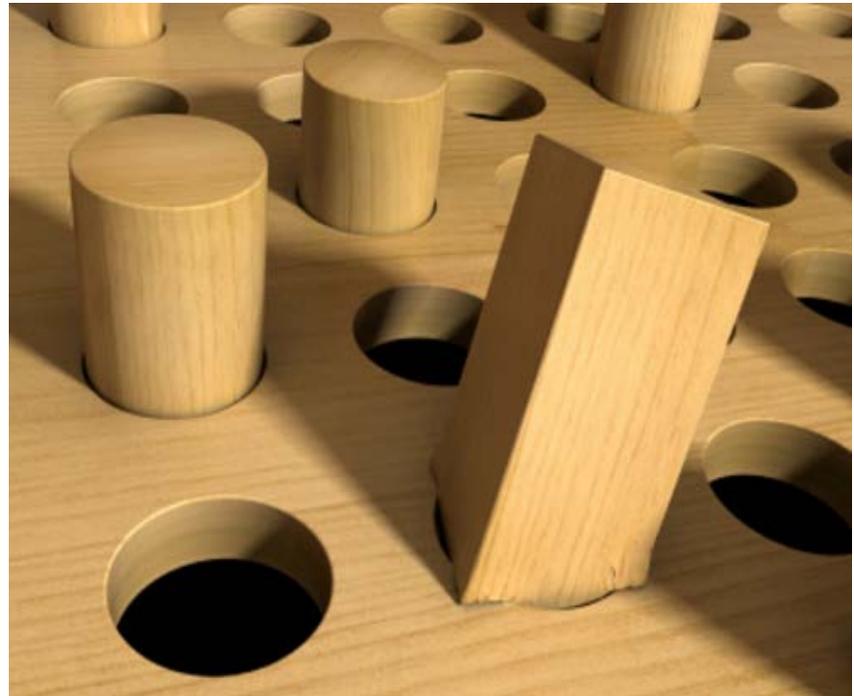


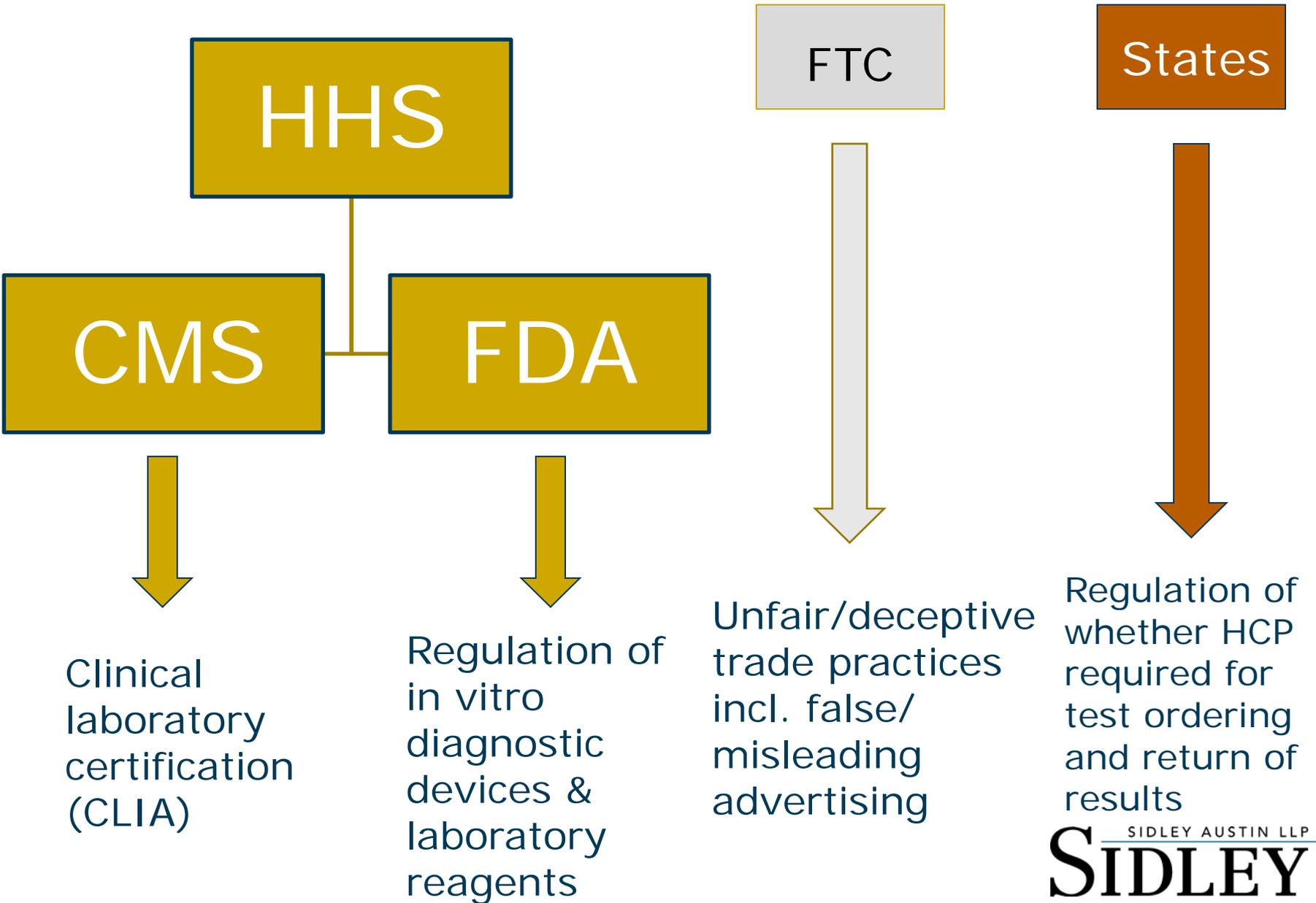
Recreational



DTC: Is There Oversight?

- Oversight of What?
- By Whom?
- For What Purpose?





Key FDA Events Re: LDTs/DTC Tests

Date	Event
November 21, 1997	FDA articulates "enforcement discretion" policy for laboratory-developed tests
April 7, 2000	FDA asserts authority over LDTs for drugs-of-abuse testing
September 7, 2006-2007	In draft guidance, FDA asserts authority over specific subset of LDTs (IVDMIA) used in disease prognosis – holds public meeting – ultimately abandons approach
September 14, 2007	FDA issues guidance document on ASR frequently asked questions
September 29, 2008	FDA issues Warning Letter to LabCorp asserting that OvaSure is a device subject to FDA regulation
May-June 2010	FDA issues Untitled Letters to companies offering DTC testing informing them that their tests are medical devices subject to FDA regulation
June 17, 2010	FDA announces public meeting and requests comments regarding its approach toward regulating LDTs
July 19-20, 2010	FDA holds public meeting on regulation of LDTs
March 8-10, 2011	FDA convenes expert advisory panel to make recommendations on scientific issues concerning DTC genetic tests that make medical claims
September-October 2011	FDA states it intends to exercise enforcement discretion with respect to all LDTs except those offered DTC pending the issuance of guidance outlining FDA's approach to LDT regulation
January 2012	CDRH's 2012 guidance agenda lists three planned draft guidances on LDTs
July 9, 2012	Congress requires FDA to notify Congress at least 60 days before issuing guidance on FDA regulation of LDTs
January 2013	CDRH's 2013 guidance agenda does not include any planned LDT guidances/draft guidances; does list a planned draft guidance regarding DTC Genetic Testing

Where are we now?



- FDA regulatory landscape largely remains unchanged
 - No new regulations
 - FDA has stated that it plans to issue guidance this year
 - Not clear whether the Agency has sufficient authority or will follow appropriate administrative procedures

BUT

- FDA's public statements and individual enforcement actions have led some DTC companies to involve a physician (at least to submit test order and receive results)

DTC: Why Worry?

**Test Accuracy/
Validity**

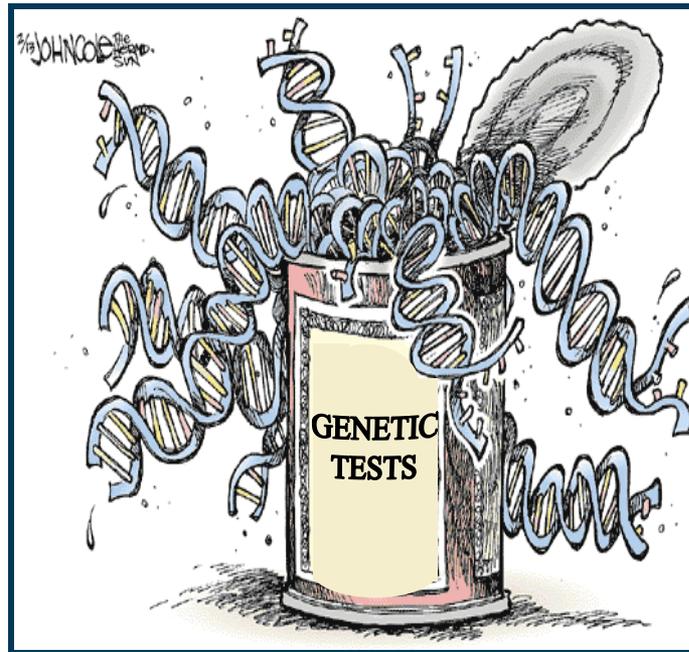
Laboratory Quality

Lack of Counseling

Misinterpretation

Misrepresentation

**Inappropriate test
selection**



Privacy

Discrimination

**Surreptitious
Testing**

**Consequences
for other family
members**

Impact on Consumers

- Consumers can't understand genetic information; it is complicated.
- Consumers vulnerable to exaggerated claims.
- Consumers may get tested without adequately considering consequences to themselves and family
- Consumers may forego standard treatments or make dietary or lifestyle changes without proven benefit
- Consumers may seek and receive unneeded and costly care

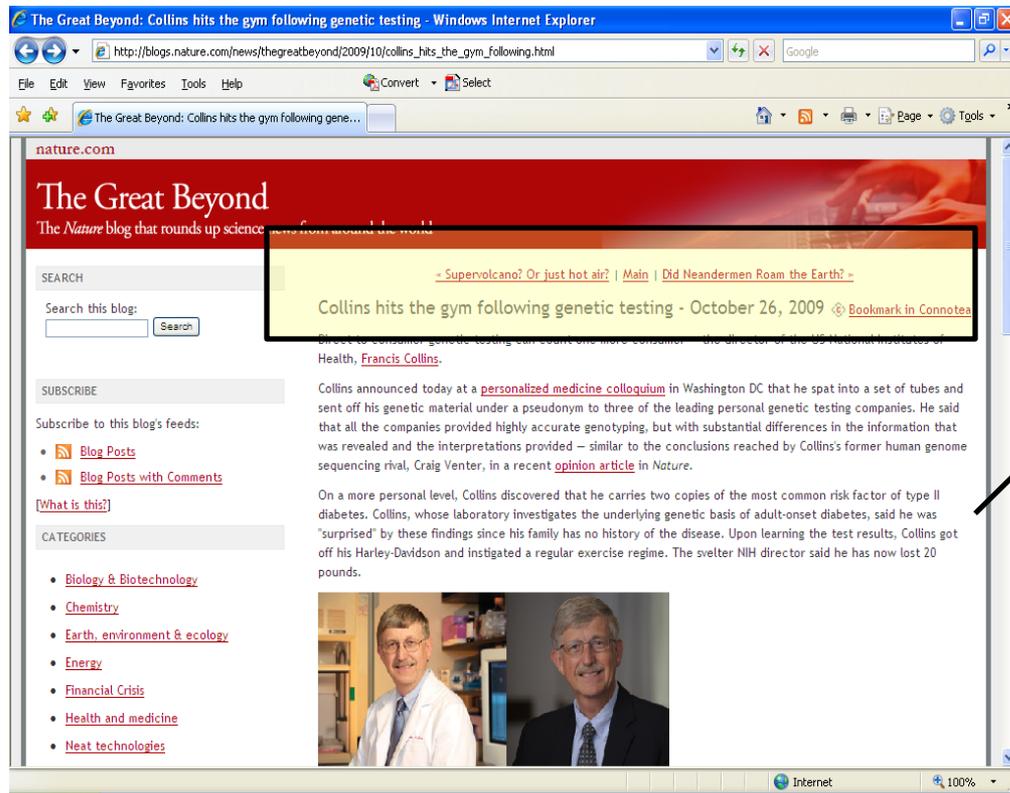
What does “incidental” mean in the context of DTC testing



What does “incidental” mean in the context of DTC testing

- Learning something you did not expect?
 - “I thought I was at high/low risk of X, but my results say otherwise”
 - May lead to positive/negative/no actions by recipient

Collins hits the gym following genetic testing - October 26, 2009



“Collins discovered that he carries two copies of the most common risk factor of type II diabetes. Collins, whose laboratory investigates the underlying genetic basis of adult-onset diabetes, said he was "surprised" by these findings since his family has no history of the disease. Upon learning the test results, Collins got off his Harley-Davidson and instigated a regular exercise regime. The svelter NIH director said he has now lost 20 pounds.”

What does “incidental” mean in the context of DTC testing

- Receiving information you did not request?
 - Example: Patient requests information on genes related to male-pattern baldness, but Company tests for and reports information on cancer risk
 - Has company committed legal violation? Ethical violation?

What does “incidental” mean in the context of DTC testing

- Not receiving information you would have expected?
 - Company reports no increased risk for disease, but fails to disclose limitations of test
 - E.g., carrier screening for Tay Sachs Disease
 - 23andme tests for only the most common mutations; misses those more common in non-AJ population
 - Does not include enzyme test for HexA – which is recommended as primary method to screen for TS
 - Consumer may think s/he is “not at risk” when in fact s/he is