March 13, 2007

This is an abbreviated version of Genomics and Health Weekly Update, published by the National Office of Public Health Genomics at CDC. View using the HTML option in Groupwise. The full the unabridged version, is available online at:

Spotlight: Colorectal cancer is the second leading cause of death from cancer in the United States. Family history can help identify individuals at increased risk of colorectal cancer, which could prompt earlier and more frequent screening and monitoring. Read more

Cancer

“Drivers and passengers on the road to cancer” (Mar 7) EurekAlert! reports, “Scientists at the Wellcome Trust Sanger Institute, where one-third of the human genome was sequenced, have now pioneered decoding the sequence of cancer genomes.”

“Major gene study uncovers secrets of leukemia” (Mar 7) EurekAlert! reports, “St. Jude study scans 350,000 locations across the genome from 242 patients and identifies new mutations that contribute to acute lymphoblastic leukemia, suggesting new targets for improved therapy.”

“Researchers find the mechanism by which cells resist chemotherapy” (Mar 2) EurekAlert! reports, “In his paper, to be published in The EMBO Journal, Dr Surrallés describes how proteins of the Fanconi/BRCA pathway recognise the presence of genetic mutations in order to repair them.”

BRCA1 and BRCA2 status in a Central Sudanese series of breast cancer patients: interactions with genetic, ethnic and reproductive factors
Awadelkarim KD, et al.
Breast Cancer Res Treat 2007 Mar

Polymorphism of selected enzymes involved in detoxification and biotransformation in relation to lung cancer
Gresner P, et al.
Lung Cancer 2007 Mar

“Life-saving cancer genetic testing vastly underutilized” (Mar 6) Medical News Today reports, “A study released today at the Society of Gynecologic Oncologists 38th Annual Meeting on Women's Cancer found few patients were aware of genetic cancer syndromes and the high risk of developing cancer if genetic mutations were found.”
“Colon cancer risk: it’s often all in the family” (Mar 5) newswise reports, “Forty-one-year-old Amenia Lauth has a family history of colon cancer. Her grandfather and uncle, both of whom developed colon cancer at a young age, succumbed to the disease, and several other relatives had precancerous polyps in their colon.”

The challenge of evaluating annual mammography screening for young women with a family history of breast cancer
J Med Screen 2006;13(4):177-82

Family history of cancer in children with acute leukemia, Hodgkin's lymphoma or non-Hodgkin's lymphoma: The ESCALE study (SFCE)
Rudant J, et al.
Int J Cancer 2007 Feb

“Genetic analysis enables personalizing of treatment of cancer” (Mar 6) Science Daily reports, "Genetic analysis has enabled the personalizing of the pharmaceutical treatment of patients with cancer, enhancing thereby therapeutic efficacy and minimizing possible toxicity.”

“Gene test helps to diagnose lung cancer early” (Mar 05) Medical News Today reports, “US scientists have developed a genetic test to predict early stages of lung cancer by looking for genetic changes in the cells of a smoker's airways.”

“Toward genetically guided cancer treatment: gene expression test reveals critical characteristics of breast tumors” (Mar 1) Science Daily reports, “Two critical characteristics of breast cancer that are important to treatment can be identified by measuring gene expression in the tumor, a research team led by scientists at The University of Texas M. D. Anderson Cancer Center reports in Lancet Oncology online.”

A randomized controlled trial of a decision aid for women considering genetic testing for breast and ovarian cancer risk
Wakefield CE, et al.
Breast Cancer Res Treat 2007 Feb

Cardiovascular, Diabetes, Hypertension, Stroke, and Related Conditions

“Type 1 diabetes genetic risk much higher than previous estimates” (Mar 5) eMaxHealth reports, “A discovery at the Barbara Davis Center for Childhood Diabetes has identified a genetic risk for type 1 diabetes three to four times higher than previously thought possible.”

“Single genetic defect causes early heart disease” (Mar 1) EurekAlert! reports, “A team of researchers from the United States and Iran has
identified a genetic mutation that causes early onset coronary artery disease in members of a large Iranian family.”

**Genetic contributions to Type 2 diabetes: recent insights**
Sale MM & Rich SS

**The effect of HapMap on cardiovascular research and clinical practice**
Skelding KA, et al.

**A review of genetic causes of ischemic and hemorrhagic stroke**
Tonk M & Haan J
J Neurol Sci 2007 Feb

“DVT victim’s family wants babies tested for ‘killer’ gene”
(Mar 6) The Herald reports, “The family of a student who died from deep vein thrombosis are calling for a blood test to be made available to spot those at risk of the potentially fatal condition.”

**Ethical, Legal, and Social Issues**

“Genetic conditions often lead to insurance refusal”
(Mar 6) Reuters Health reports, “People with sickle cell disease or cystic fibrosis—two genetic disorders—are twice as likely to be denied health insurance coverage compared with those with other chronic illnesses, according to the results of a survey.”

“Insurers cautious about genetic tests”
(Mar 4) Sympatico msn News reports, “Some Canadians are paying high rates for critical illness insurance because the sellers aren't taking into consideration genetic tests that show the client's risk is reduced.”

**Knowledge about genetics among african americans**
Kessler L, et al.
J Genet Couns 2007 Apr;16(2):191-200

**Genomic Tools**

“University of Bristol to create new medical research centre”
(Mar 4) News-Medical.Net reports, “The University of Bristol has been awarded £2.7 million by the Medical Research Council (MRC) to create a new research centre which
will apply knowledge from genetic analyses to large-scale studies of the health of the population.”

“2007 ACMG Annual Clinical Genetics meeting - there is still time to register”
(Mar 1) Medical News Today reports, “Are you a professional in medical and clinical genetics providing comprehensive diagnostic, management or genetic counseling services for patients with, or at risk for, genetically influenced health problems?”

“Mapping disease: microarrays super-power genetic content analysis”
(Mar 1) EContent reports, “New DNA microarrays that can profile more than 500,000 exact genetic variations are giving researchers a better view of the genetic causes of many illnesses and helping them work towards more personalized treatments.”

The Role of Genetics in the Provision of Essential Public Health Services
Wang G & Watts C
Am J Public Health 2007 Feb

The effect of non-additive genetic interactions on selection in multi-locus genetic models
Hallander J & Waldmann P
Heredity 2007 Feb

Analysis of phenotype-genotype connection: the story of dissecting disease pathogenesis in genomic era in China, and beyond
Shen Y, et al.

Probability biases in genetic problem solving: a comparison of undergraduates, genetic counseling graduate students, and genetic counselors
Dewhurst ME, et al.
J Genet Couns 2007 Apr;16(2):157-70

Immune System and Autoimmunity

HLA-DR15 Haplotype and Multiple Sclerosis: A HuGE Review
Schmidt H, et al.
Am J Epidemiol 2007 Feb

Prevalence of duplications and deletions of the 22q11 DiGeorge syndrome region in a population-based sample of infants with cleft palate
Sivertsen A, et al.

Infectious Disease
“Gene defect leads to an AIDS drug”
(Mar 5) boston.com News reports, “In 1996, scientists solved a mystery surrounding certain gay men who were immune to AIDS.”

Mental Health (including Addiction)

“Anorexia Nervosa may be genetic: scientists”
(Mar 7) NDTV.com reports, “Anorexia Nervosa, an eating disorder where a person starves to change her body image and become very thin, is on a rise in India.”

“Potential genetic testing for substance abuse raises hope, concern”
(Mar 6) EurekAlert! reports, “Genetic tests using blood samples already are used to diagnose some diseases and even personalize treatment.”

Phenotypic and genetic complexity of psychosis: Invited commentary on ...
Schizophrenia: a common disease caused by multiple rare alleles
Craddock N, et al.
Br J Psychiatry 2007 Mar;190:200-3

Schizophrenia: a common disease caused by multiple rare alleles
McClellan JM, et al.
Br J Psychiatry 2007 Mar;190:194-9

Family History of Alcoholism Influences Naltrexone-Induced Reduction in Alcohol Drinking
Krishnan-Sarin S, et al.
Biol Psychiatry 2007 Mar

“Blood tests may be possible for mental health conditions”
(Mar 6) EurekAlert! reports, “Blood tests for panic disorder and other mental health conditions are potentially around the corner, based on results from a University of Iowa study.”

Neonatal and Perinatal Health

“New genetic causes of facial clefts identified”
(Mar 5) Yahoo! News reports, “Researchers studying the causes of facial clefts have identified a handful of new genetic mutations linked to these birth defects in a step that might help lead to a test to predict a family's risk.”

Prevalence of duplications and deletions of the 22q11 DiGeorge syndrome region in a population-based sample of infants with cleft palate
Sivertsen A, et al.
Nervous System and Movement Disorders

“Study examines genetic risk factors for Alzheimer's disease”
(Mar 5) EurekAlert! reports, “Cardiff University researchers have found evidence for new genes involved in the development of Alzheimer's disease. “

“Gene tests and brain imaging reveal early dementia”
(Mar 6) News-Medical.Net reports, “Dementia diseases develop insidiously and are generally discovered when the memory has already started to deteriorate.”

**HLA-DR15 Haplotype and Multiple Sclerosis: A HuGE Review**
Schmidt H, et al.
Am J Epidemiol 2007 Feb

Pharmacogenomics

“Genetic analysis enables personalizing of treatment of cancer”
(Mar 6) Science Daily reports, "Genetic analysis has enabled the personalizing of the pharmaceutical treatment of patients with cancer, enhancing thereby therapeutic efficacy and minimizing possible toxicity.”

“Gene defect leads to an AIDS drug”
(Mar 5) boston.com News reports, “In 1996, scientists solved a mystery surrounding certain gay men who were immune to AIDS.”

Let's Go Surfing

The Minnesota Gene Pool Weblog