



FAST Facts

December 2011

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Announcements

Happy holidays!

We wish everyone a very happy, safe, and merry holiday season! We look forward to seeing and working with you in 2012!

Conference announcement – Serving Offenders with Cognitive Impairments: Transitioning into the Community

Mark your calendars for the UAA Center for Human Development 7th Annual Statewide Conference on Serving Offenders with Cognitive Impairments in the Community.

When: Wednesday, February 1 and Thursday, February 2, 2012

Where: Captain Cook Hotel, Anchorage

Cost: \$45 for one day, \$75 for two days. Limited scholarships are available.

More information will be available from the UAA

Research *FAST Facts*: Alcohol Metabolism

Where possible, we provide a link where the article can be purchased and/or downloaded. Research abstracts are provided for the purposes of discussion; they do not necessarily reflect the views or position of the Arctic FASD RTC or the CDC.

Edenberg, H.J. (2007) The Genetics of Alcohol Metabolism. *Alcohol Research & Health* 30(1): 5-13.

Abstract: The primary enzymes involved in alcohol metabolism are alcohol dehydrogenase (ADH) and aldehyde dehydrogenase (ALDH). Both enzymes occur in several forms that are encoded by different genes; moreover, there are variants (i.e., alleles) of some of these genes that encode enzymes with different characteristics and which have different ethnic distributions. Which ADH or ALDH alleles a person carries influence his or her level of alcohol consumption and risk of alcoholism. Researchers to date primarily have studied coding variants in the ADH1B, ADH1C, and ALDH2 genes that are associated with altered kinetic properties of the resulting enzymes. For example, certain ADH1B and ADH1C alleles encode particularly active ADH enzymes, resulting in more rapid conversion of alcohol (i.e., ethanol) to acetaldehyde; these alleles have a protective effect on the risk of alcoholism. A variant of the ALDH2 gene encodes an essentially inactive ALDH enzyme, resulting in acetaldehyde accumulation and a protective effect. It is becoming clear that noncoding variants in both ADH and ALDH genes also may influence alcohol metabolism and, consequently, alcoholism risk; the specific nature and effects of these variants still need further study.

ISSN: 1535-7414

Kang, T.S., Woo, S.W. Park, H.J., Lee, Y. and Roh, J. (2009) Comparison of genetic polymorphisms of *CYP2E1*, *ADH2*, and *ALDH2* genes involved in alcohol metabolism in Koreans and four other ethnic groups. *Journal of Clinical Pharmacy and Therapeutics* 34(2): 225-230.

Abstract: Background and objectives: Recent studies of the genetics of alcoholism have

Center for Human Development (CHD) soon. Please contact CHD if you have any questions regarding this conference.

Call for Presentations – 2012 Building FASD State Systems Conference

The Substance Abuse and Mental Health Services Administration (SAMHSA) Fetal Alcohol Spectrum Disorders (FASD) Center for Excellence is soliciting presentation abstracts for the 2012 Building FASD State Systems (BFSS) Conference.

Presentations should address FASD prevention and/or treatment and successful methods to develop or improve comprehensive systems of care for individuals affected by FASD and their families. Presentation abstracts can be submitted by e-mail, fax, or postal mail.

Deadline: Tuesday, January 10, 2012

The conference will be held in Arlington, Virginia May 1-3, 2012.

Need more information? Please contact Crissy Rivers-Crittenden at 301.527.6522 or crissy.rivers@ngc.com.

Need FASD training in your agency?

The Arctic FASD Regional Training Center is available to conduct FASD workshops that are tailored to your agency and staff's FASD training needs.

For more information, please contact us at 907.786.6381 or arcticfasdrtc@uaa.alaska.edu.

considered genetic factors in alcohol metabolism and have identified functional polymorphisms in genes encoding enzymes involved in ethanol metabolism. The aim of this study was to estimate the genotype and allele frequencies of polymorphisms of three major ethanol-metabolizing enzymes (ADH2, ALDH2 and CYP2E1) in Koreans and to compare them with those of other ethnic groups. Methods: We chose three polymorphisms, ADH2 (*2), ALDH2 (*2) and CYP2E1 (c2), which are most likely to affect alcohol metabolism. To evaluate the allele frequencies of these single-nucleotide polymorphisms, 342 healthy Korean volunteers were recruited. Each genotype was determined by the TaqMan or SNaPshot method with genomic DNA extracted from peripheral leucocytes. We compared these allele frequencies with those of other ethnic groups registered on the International HapMap database. Results and discussion: The allele frequencies in Koreans were 80.3% for the ADH2 (*2), 13.9% for ALDH2 (*2), and 20.9% for CYP2E1 (c2). Other Asians, including Japanese and Chinese populations, show similar frequencies (Japanese, 73.9%, 22.7%, and 20.5% respectively and Chinese, 76.7%, 15.6%, and 28.9% respectively), whereas African and European groups have quite different frequencies (Europeans, 0%, 0%, and 5.1% respectively and African, 0%, 0%, and 0% respectively). Conclusion: Our current observations provide data on the prevalence of polymorphisms of ethanol-metabolizing enzymes, which should be useful in assessing the comparative susceptibility of different populations to diseases related to ethanol consumption.

ISSN: 0269-4727; DOI: 10.1111/j.1365-2710.2008.00986.x

Linneberg, A., Gonzalez-Quintela, A., Vidal, C., Jørgensen, T., Fenger, M., Hansen, T., Pedersen, O. and Husemoen, L.L.N. (2010) Genetic determinants of both ethanol and acetaldehyde metabolism influence alcohol hypersensitivity and drinking behavior among Scandinavians. *Clinical and Experimental Allergy* 40(1): 123-130.

Abstract: Background: Although hypersensitivity reactions following intake of alcoholic drinks are common in Caucasians, the underlying mechanisms and clinical significance are not known. In contrast, in Asians, alcohol-induced asthma and flushing have been shown to be because of a single nucleotide polymorphism (SNP), the acetaldehyde dehydrogenase 2 (ALDH2) 487Iys, causing decreased acetaldehyde (the metabolite of ethanol) metabolism and high levels of histamine. However, the ALDH2 487Iys is absent in Caucasians. Objectives: To investigate the genetic determinants of self-reported alcohol-induced hypersensitivity reactions in Caucasians. Methods: The study included two population-based studies of 1216 and 6784 adults living in Copenhagen. Assessment of alcohol consumption and hypersensitivity reactions (in a subgroup) was performed by a questionnaire and was related to common SNPs of genes encoding alcohol dehydrogenases (ADHs) and ALDHs. Results: In both populations, alcohol drinkers with a genetically determined fast metabolism of ethanol (the A allele of the ADH1b rs1229984) had an increased risk of alcohol-induced hypersensitivity reactions (odds ratio AA/AG vs. GG in combined populations: 1.82, 95% CI 1.04–3.17). In both populations, a common SNP encoding ALDH1b1 (rs2228093) was found to be

FASD Foundations Workshop

Our next FASD Foundations workshop will be held:

- Friday, January 27, 9:00 a.m. to 1:00 p.m.

The location for the workshop is to be confirmed.

Cost: Free!

Registration is recommended. Call 907.786.6381 or check our website for more information:

www.uaa.alaska.edu/arcticfasdrtc/training/fasdfoundations.cfm

Participants will be eligible to receive continuing education (CE) credits for completion of these workshops (\$25.00 processing fee).

FASD 201 Workshop

Our next FASD 201 workshop will be held:

- Friday, February 24, 9:00 a.m. to 1:00 p.m.

The location for the workshop is to be confirmed.

Cost: Free!

Registration is recommended. Call 907.786.6381 or check our website for more information:

www.uaa.alaska.edu/arcticfasdrtc/training/fasd201.cfm

significantly associated with alcohol-induced hypersensitivity (odds ratio TT vs. CC in combined populations: 2.53, 95% CI 1.31–4.90). Conclusions: Our data support that alcohol sensitivity in Caucasians is genetically determined and suggest that a histamine-releasing effect of acetaldehyde represents a plausible biological mechanism. Furthermore, we present the first report of a clinically significant SNP within the acetaldehyde-metabolizing system in a Caucasian population. ISSN: 0954-7894; DOI: 10.1111/j.1365-2222.2009.03398.x

Shankar, K., Ronis, M.J.J. and Badger, T.M. (2007) Effects of pregnancy and nutritional status on alcohol metabolism. *Alcohol Research & Health* 30(1): 55-59.

Abstract: Metabolism of alcohol (i.e., ethanol) is regulated by genetic and environmental factors as well as physiologic state. For a given alcohol intake, the rate of alcohol clearance, which ultimately determines tissue ethanol concentrations, may be the most significant risk factor for many of the detrimental effects of alcohol. Faster ethanol clearance would help minimize target tissue concentrations, and in pregnant women, mitigate fetal alcohol exposure. Much remains to be known about the effects of the altered endocrine milieu of pregnancy on alcohol metabolism and clearance in the mother. Research has shown that among pregnant rats allowed unrestricted access to alcohol and those fed alcohol containing liquid diets under experimental conditions via a feeding tube (total enteral nutrition [TEN]), urine ethanol concentrations (and thus blood and tissue ethanol concentrations) are lower in pregnant rats compared with non-pregnant females given the same dose of ethanol. Maternal nutritional status also is an important determinant of fetal alcohol toxicity. Research using the TEN system has demonstrated that alcohol-induced fetal growth retardation is potentiated by undernutrition in part via impaired alcohol metabolism and clearance.

ISSN: 1535-7414

Tolstrup, J.S., Nordestgaard, B.G., Rasmussen, S., Tybjaerg-Hansen, A. and Grønbaek, M. (2008) Alcoholism and alcohol drinking habits predicted from alcohol dehydrogenase genes. *Pharmacogenomics Journal* 8(3):220-227.

Abstract: Alcohol drinking habits and alcoholism are partly genetically determined. Alcohol is degraded primarily by alcohol dehydrogenase (ADH) wherein genetic variation that affects the rate of alcohol degradation is found in ADH1B and ADH1C. It is biologically plausible that these variations may be associated with alcohol drinking habits and alcoholism. By genotyping 9080 white men and women from the general population, we found that men and women with ADH1B slow vs fast alcohol degradation drank more alcohol and had a higher risk of everyday drinking, heavy drinking, excessive drinking and of alcoholism. For example, the weekly alcohol intake was 9.8 drinks (95% confidence interval (CI): 9.1–11) among men with the ADH1B·1/1 genotype compared to 7.5 drinks (95% CI: 6.4–8.7) among men with the ADH1B·1/2 genotype, and the odds ratio (OR) for heavy drinking was 3.1 (95% CI: 1.7–5.7) among men with the ADH1B·1/1 genotype compared to men with the ADH1B·1/2 genotype. Furthermore,

Participants will be eligible to receive continuing education (CE) credits for completion of these workshops (\$25.00 processing fee).

Helpful Resources

[CDC: What you should know about alcohol and pregnancy](#)

[CDC: Lo que debe saber sobre el emabrazo y el alcohol](#)

[Families Moving Forward](#)

[Stone Soup Group](#)

[ICEBERG](#)

[FAS Diagnostic & Prevention Network](#)

[SAMHSA FASD Center for Excellence](#)

[State of Alaska Office of FAS](#)

[Alaska FASD Partnership](#)

Intervention Corner

A word about labels

While assessments and diagnosis can be supportive for individuals living with FASD, labels are not. Labels limit.

Identification is only a beginning, a start for exploring the question "Who is this person?" and develop appropriate person-specific accommodations.

Used compassionately and supportively, naming the disability helps us understand the unique learning needs of the person in order to craft appropriate accommodations and individualized supports in response to those needs.

Understanding FASD is important; learning about the individual is essential to creating successful supports and respectful relationships.

individuals with ADH1C slow vs fast alcohol degradation had a higher risk of heavy and excessive drinking. For example, the OR for heavy drinking was 1.4 (95% CI: 1.1–1.8) among men with the ADH1C·1/2 genotype and 1.4 (95% CI: 1.0–1.9) among men with the ADH1B·2/2 genotype, compared with men with the ADH1C·1/1 genotype. Results for ADH1B and ADH1C genotypes among men and women were similar. Finally, because slow ADH1B alcohol degradation is found in more than 90% of the white population compared to less than 10% of East Asians, the population attributable risk of heavy drinking and alcoholism by ADH1B·1/1 genotype was 67 and 62% among the white population compared with 9 and 24% among the East Asian population.

ISSN: 1470-269X; DOI: 10.1038/sj.tpj.6500471

FASDs in the Media

The links to news articles and opinion pieces presented below are provided for the purposes of discussion. The Arctic FASD RTC is not responsible for the titles and/or content of the articles, nor do they necessarily reflect the views or position of the Arctic FASD RTC.

United States

[What babies learn before they're born](#)

CNN, December 11, 2011

[Ellie Gertz, adopted then relinquished, tore families apart](#)

abc News, December 7, 2011

[Wayne State gets grant to study fetal alcohol disorders](#)

CBS Detroit, December 5, 2011

[Fetal alcohol program takes unique cultural approach](#)

Twin Cities Daily Planet, November 29, 2011

[John Packham: Prevention plays powerful role in fight against fetal alcohol spectrum disorders](#)

RGJ.com, November 28, 2011

[Downtown dilemma: Life on the street](#)

Juneau Empire, November 24, 2011

[Pregnant boozing a horrible decision](#)

MySA, November 22, 2011

[Editorial Sounding Board: Pregnancy and alcohol don't mix](#)

Arizona Daily Sun, November 20, 2011

International

[Teen mum's premature party birth](#)

Language matters

A key characteristic of FASD is differences in how language is processed and used. The nature of brain development in a person with FASD creates challenges with understanding and interpreting abstract words or concepts. Here are some ways to think about and use language to support success:

- Remember that language processing often takes much longer. Use fewer words, slow down, and give time for the person to answer one thing at a time.
- Be direct, concrete and forthright, emphasizing specifically what is required. For example, *Meet me at the front desk of the school at 5 p.m.* Suggesting you meet *around 5 in the school lobby* does not provide specific enough information and is too vague.
- Provide positive choices. The individual then feels they can succeed either way and that they have some control in the decision-making. For example, *Will we clean your apartment now or at 2:00 p.m. tomorrow?*
- Be consistent with how you describe things, make requests, and set expectations. Daily reminders will be necessary. If the person is a visual learner, incorporate visual reminders, rather than only language-based ones?
- Augment what you are saying with visual cues or placing the topic in a context that is immediate, understandable, and of interest to the person.
- Avoid abstract words, innuendos, sarcasm, or euphemisms such as *I'm going to hit the hay* or *I'm dog-tired*. The person may have a literal interpretation and misunderstand the statement.
- Avoid conditional words such as *however, instead of, provided that, probably, likely*.
- Support the individual to put their feelings into words. For example, teach the person how to identify where they feel their anxiety. *Does your head hurt? Show me where it hurts*. Then teach how to identify the feeling in the location and what to do in response – ask for a five minute

New Zealand Herald, December 11, 2011

Temperance activists seek warning labels for pregnant women on booze bottles
Estonian Public Broadcasting, December 6, 2011

Get the buzz on mocktails – alcohol-free drinks are more inclusive and safer choices for people this holiday season
Northumberland View, December 6, 2011

Fetal harm warnings likely for alcohol labels
New Zealand Herald, December 3, 2011

The sobering facts on fetal alcohol
The Sudbury Star, December 1, 2011

Pregnancy health dilemmas solved by our GP
MadeforMums, December 1, 2011

Meeting aims to help adults with FASD
CBC News, November 28, 2011

How much is too much when you're pregnant?
The Star, November 23, 2011

Detention 'fails' to solve foetal alcohol problems
TheWest.com.au, November 15, 2011

Arctic FASD RTC *FAST Facts*

Building on past and current FASD education and awareness efforts in Alaska, the goal of the *Arctic FASD RTC* is to increase FASD knowledge, awareness, and practice competence among health and allied healthcare professionals and students. Using the Centers for Disease Control and Prevention (CDC)'s *FASD Competency-Based Curriculum Development Guide*, we deliver education and training in the form of workshops, seminars, and other resources to professionals and students. We are also certified State of Alaska FASD101 and FASD201 trainers.

The *Arctic FASD RTC* is honored to have the assistance of our national consultants, and our advisory board. Assisting us with our training are our affiliate faculty and our speakers' bureau.

There are three other RTCs in operation around the United States: the Frontier FASD RTC, the Great Lakes FASD RTC, and the Southeastern FASD RTC. All are funded through the Centers for Disease Control and Prevention.

About *FAST Facts*

FAST Facts is a monthly email newsletter with announcements and information about

break, walk away, count to 10, put on iPod, etc.
(Adapted from *Supporting Success for Adults with Fetal Alcohol Spectrum Disorder (FASD)*. Published by Community Living British Columbia, www.communitylivingbc.ca, 1-877-660-2522)

Do you have an idea for the Intervention Corner? Do you have some tips or suggestions for how to help individuals with an FASD be successful? Email *FAST Facts* at arcticfasdrtc@uaa.alaska.edu and let us know!

Contact Us:

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upcoming training opportunities, a sampling of FASD news and research from Alaska, the U.S.A., Canada, and around the world, as well as links to helpful resources. Please feel free to forward the newsletter to anyone you know who has an interest in FASDs.

FAST Facts is compiled and edited by the Arctic FASD RTC staff. We make every effort to provide links to original content, and to make sure those links are accurate at the time the newsletter is sent. The Arctic FASD RTC has no control over any links that change after publication of the newsletter. The Arctic FASD RTC is not responsible for the content of external Internet sites. News articles and research abstracts are provided for the purposes of discussion; they do not necessarily reflect the views or position of the Arctic FASD RTC.

We hope you find these newsletters helpful and informative. We welcome your input for content. Please send suggestions to arcticfasdrtc@uaa.alaska.edu.

About this message

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Funding for the Arctic FASD Regional Training Center has been provided by the U.S. Department of Health and Human Services, [Centers for Disease Control and Prevention Cooperative Agreement # CDC U84DD000886-01](#).

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