



Providing data and tools
to promote understanding and treatment
of type 2 diabetes and its complications

This is the Type 2 Diabetes Knowledge Portal (T2DKP) newsletter. Each quarter, it keeps you informed about recent updates to the T2DKP, other news, and upcoming conferences. To subscribe to the email edition or unsubscribe from it, please contact us at help@type2diabetesgenetics.org.

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NEW DATA

New phenotypes and physical activity stratification added

In our Phase 2 analysis of the BioMe AMP T2D GWAS dataset, we added associations with seven more phenotypes: systolic and diastolic blood pressure; HDL and LDL cholesterol levels; creatinine levels and eGFR-creatinine; and BMI. We've also added a new dataset, "GIANT GWAS - stratified by physical activity," which is a meta-analysis of genetic associations for BMI, waist-hip ratio, and waist circumference from more than 200,000 adults, with samples stratified by sex, ancestry, and physical activity level (active or inactive). See all the details about both datasets in [this blog post](#).

Bringing the power of epigenomics to the T2DKP

We've continued to add more epigenomic data to the T2DKP along with new ways to search and visualize it. Dr. Kyle Gaulton contributed to a [blog post](#) that highlighted the importance of epigenomic data for finding clues about the mechanisms by which variants, particularly those in non-coding regions, affect disease risk. In the past quarter we've added ATAC-seq tracks, indicating chromatin accessibility, for some tissues. We've also added new ways to access epigenomic data from LocusZoom plots. In the LocusZoom plots on both Gene and Variant pages, the tooltip that appears upon clicking on a variant now contains a link, "Expanded view", that opens a display of chromatin states across the region of that variant. On Gene pages, the tooltip contains an additional link, "Tissues

with overlapping enhancer regions.” Clicking on this link displays below the LocusZoom plot the epigenomic tracks from those tissues in which an enhancer region overlaps the position of the variant.

NEW FEATURES AND TOOLS

Two more complex disease Knowledge Portals launched, forming a Knowledge Portal Network

The Type 2 Diabetes Knowledge Portal was built as the central product of the [Accelerating Medicines Partnership in Type 2 Diabetes](#), with the goal of speeding up the translation of genetic data into actionable knowledge for diagnosis and treatment of T2D. Since the T2DKP infrastructure can easily be applied to genetic associations for any phenotype, we are now forming collaborations to work towards this goal for other complex diseases. In August, we released the [Cerebrovascular Disease Knowledge Portal](#), built in partnership with the [International Stroke Genetics Consortium](#). Last week we launched the [Cardiovascular Disease Knowledge Portal](#), a collaboration with the groups of Drs. Patrick Ellinor and Sek Kathiresan at the Broad Institute and with several cardiovascular genetics consortia.

The three resources now form a Knowledge Portal Network. The Portals share some datasets and are currently linked to each other via their home pages. In the future, we will be working to more closely integrate them.

OTHER T2DKP NEWS

Genetic variation in *IGF2* affects T2D risk and may suggest a therapeutic target

A new study published by Josep Mercader at the Broad Institute and world-wide colleagues ([Mercader et al. 2017, Diabetes](#)) found a novel variant in the coding sequence of the *IGF2* gene that decreases T2D risk and is common in Hispanic populations but rare in other ancestries. The work uncovered some of the molecular details behind the variant’s effect and suggested a possible avenue for T2D drug development. Read a summary of these findings in [our T2DKP blog post](#).

Knowledge Portal team presence at Fall conferences

This Fall was a busy season for the Knowledge Portal team. You can read blog posts describing our participation at the [Festival of Genomics](#) and the [American Society of Human Genetics meeting](#). We also attended the American Heart Association Scientific Sessions, where we presented the newly hatched Cardiovascular Disease Knowledge Portal.

UPCOMING CONFERENCES

This section lists upcoming conferences that are relevant to T2D and human genetics; asterisks indicate attendance by T2DKP team members.

Epigenetics and Epigenomics: Implications for Diabetes and Obesity

November 17-19, 2017, Cambridge, MA

Abstract deadline: August 18

Advances in Genome Biology and Technology (AGBT)

February 12-15, 2018, Orlando, FL

Abstract deadline: September 30

78th Scientific Sessions of the American Diabetes Association

June 22-28, 2018, Orlando, FL

Abstract deadline: January 8

Please let us know of conferences that should be added to this list.

STAY IN TOUCH!

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