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Autor(en) des Beitrags: Voight, BF; Kang, HM; Ding, J; Palmer, CD; Sidore, C; Chines, PS; Burtt, NP; Fuchsberger, C; Li, Y; Erdmann, J; Frayling, TM; Heid, IM; Jackson, AU; Johnson, T; Kili peläinen, TO; Lindgren, CM; Morris, AP; Prokopenko, I; Randall, JC; Saxena, R; Soranzo, N; Speliotes, EK; Teslovich, TM; Wheeler, E; Maguire, J; Parkin, M; Potter, S; Rayner, NW; Robertson, N; Stirrups, K; Winckler, W; Sanna, S; Mulas, A; Nagaraja, R; Cucca, F; Barroso, I; Deloukas, P; Loos, RJ; Kathiresan, S; Munroe, PB; Newton-Cheh, C; Pfeufer, A; Samani, NJ; Schunkert, H; Hirschhorn, JN; Altshuler, D; McCarthy, MI; Abecasis, GR; Boehnke, M

Titel des Beitrags: The metabochip, a custom genotyping array for genetic studies of metabolic, cardiovascular, and anthropometric traits.

Abstract: Genome-wide association studies have identified hundreds of loci for type 2 diabetes, coronary artery disease and myocardial infarction, as well as for related traits such as body mass index, glucose and insulin levels, lipid levels, and blood pressure. These studies also have pointed to thousands of loci with promising but not yet compelling association evidence. To establish association at additional loci and to characterize the genome-wide significant loci by fine-mapping, we designed the "Metabochip," a custom genotyping array that assays nearly 200,000 SNP markers. Here, we describe the Metabochip and its component SNP sets, evaluate its performance in capturing variation across the allele-frequency spectrum, describe solutions to methodological challenges commonly encountered in its analysis, and evaluate its performance as a
platform for genotype imputation. The metabochip achieves dramatic cost efficiencies compared to designing single-trait follow-up reagents, and provides the opportunity to compare results across a range of related traits. The metabochip and similar custom genotyping arrays offer a powerful and cost-effective approach to follow-up large-scale genotyping and sequencing studies and advance our understanding of the genetic basis of complex human diseases and traits.

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