

THE GENETIC LANDSCAPE OF **TWINNING** :

A META-ANALYSIS OF GENOME-WIDE ASSOCIATION STUDIES FROM THE TWINNING GWAS CONSORTIUM

Collaborating Investigators

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Background & Aim

The purpose of the Twinning Gwas Consortium (TGC) is to conduct meta-analyses of genome-wide association study data to identify genetic polymorphisms associated with the “Twinning” trait. Knowledge of these genes may identify key mechanisms controlling ovarian function and can provide a greater understanding of female fertility and infertility, the most common reproductive disorder.



Methods

We performed a meta-analysis of 35,651 GWA samples from 6 large twin registries collected in Europe, and Australia. Three traits were studied: being a “dizygotic twin”, being a “mother of dizygotic twin” and being a “monozygotic twin”. The control group consisted of unrelated non-twin subjects. All imputations were based on the same reference panel (1000 genomes phase 1 integrated release version 3).

Results

GWAS Cases	GWAS Controls
4,073 DZ	12,538
8,135 MZ	23,532
1,653 mothers of DZ	7,248

- Three meta-analyses are currently underway and expected to be completed shortly.
- We plan to present the results during the 15th Congress of the International Society of Twin Studies in the venue of Budapest, Hungary on November 16-19, 2014.
- We are seeking a replication samples to validate the signals noted and completing additional analyses, such as gene based test and pathway analysis.