Genetics reveals obesity, diabetes linked to pathways involving sleep and immune system

Breaking down complex conditions such as Type 2 Diabetes and obesity into the specific metabolic proteins and processes that underlie them offers a new approach to studying the genetics of these diseases and how they are interrelated, according to research presented at the American Society of Human Genetics (ASHG) 2014 Annual Meeting in San Diego.

By studying specific proteins that contribute to such conditions – and the genes that encode them – scientists can develop new drugs that directly target the metabolic processes that do not function properly, explained lead author Jennifer E. Below, PhD, of The University of Texas Health Science Center at Houston (UTHealth) School of Public Health.

“In fact, genes that affect the same process at the protein level can end up influencing multiple traits in tandem,” said Dr. Below. Working with colleagues at the Baylor College of Medicine, Harvard Medical School, and the University of Chicago, Dr. Below found that genes that regulate a person’s circadian cycle affect quality of sleep but could also put him or her at risk for diabetes. Similarly, the researchers learned, a group of related proteins involved in immune system functions and interactions between cells also plays a role in heart health.

“Findings such as this highlight the importance of capturing the array of effects of genes, rather than treating each analysis as independent. Traits don’t exist in silos; they are richly connected and interacting, and we benefit by acknowledging this in our genetic analyses,” Dr. Below said.

Read full original article: Metabolic Genetics Research Paves Way to Treating Diabetes and Obesity