‘Foot soldiers’ of disease: Plasma proteins could be key to understanding genetic risks

[Blood plasma] is the home of the “secretome,” a host of proteins that serve as inter-cell communicators. These proteins are the foot soldiers in both homeostasis and disease, carrying messages from one area of the body to another. While we have studied these messengers in isolation, we are only beginning to look at them dynamically, how they change over time and their relationship to one another. Looking at the interactions opens up a new world of understanding.

Could the genetic variations, and each of us in unique in our secretome profile, be our predisposition to disease? Consider this example. Our arteries are not inert tubes, but are dynamic structures, rebuilding themselves continually. What if there was just a slight change in the chemical signals involved in the rebuilding; and as a result, the rebuilt artery was every so slightly weaker. Now add in another variable, like hypertension where the pressure inside the weakened artery is increased. The combined effect of an ever so subtle genetic variation and high blood pressure would become expressed phenotypically as an aortic aneurysm.

A recognition that a genetic variation results in the predisposition to specific a disease and is not the cause of the disease helps to explain a host of contradictory findings – disease is a result of interactions.

Read full, original post: Linking Genetics To Disease – The View From Our Chemical Messengers