FAQ: ANC By Duffy Status

1. What is the ANC by Duffy Status and its significance?

Reference ranges are intended to identify the central 95% of healthy populations. However, some laboratory values can vary among different populations like von Willebrand factor by blood type. Another example is found in the Duffy null phenotype and absolute neutrophil counts (ANC). Approximately two in three people in the United States who have African or Middle Eastern genetic ancestry have the Duffy-null phenotype. This results in a clinically insignificant lower ANC compared to the commonly used reference population which is often established from individuals of Asian or European descent of whom nearly 100% are Duffy non-null. Thus, individuals with the Duffy null phenotype have no increased risk of infection but are often incorrectly labeled as having neutropenia. This can result in unnecessary, expensive, and invasive testing, delayed or discontinued chemotherapy or other critical medications, exclusion from clinical trials, and other negative consequences.

2. Are there costs or compensation for the Healthcare Systems?

ASH has partnered with the Doris Duke Charitable Foundation and has funding available to help with the development and dissemination of Duffy-null specific reference ranges. This funding is intended to cover the costs of Duffy typing and ANC testing and patient recruitment as well as some support for the time from physicians, laboratory techs, and/or research assistants required to complete this project.

3. Is this project assessing pediatric or adult populations?

This project will attempt to validate adult reference ranges from previously published values which requires approximately 40-60 Duffy null samples. It will also attempt to establish new pediatric reference ranges which require 120 Duffy null samples per age category. Healthcare systems can opt to participate in adults only, pediatrics only, or both.

4. How is data collected and managed in the study?

There are multiple possible methods to obtain samples from healthy populations that are outlined in the draft protocols in order to match preferences and realities of each individual institution. Samples must be collected from healthy participants. However, residual blood or fresh blood can be used. Any setting where there is a density of healthy participants is acceptable. Duffy phenotyping or genotyping are both acceptable, and institutions can type samples in-house or through send-out. All institutions involved must participate in a central IRB. De-identified limited demographic data, Duffy typing, and ANC values will be submitted at regular intervals to RedCap Cloud throughout the project.