

# Identifying DANC: A First Step Toward Improving Care

## Duffy Null-Associated Neutrophil Count (DANC)

### Is

A lower peripheral absolute neutrophil count (ANC) associated with the Duffy null blood group phenotype (Fy[a-b-])<sup>1</sup>.



### Is not

A disease or a condition but a normal variant with predictable changes in normal ANC<sup>2</sup>.



## People with DANC<sup>1,3,4</sup>

### Have

- Normal bone marrow cellularity.
- Appropriate neutrophil number.
- Appropriate functional response to infection, stress, or G-CSF.

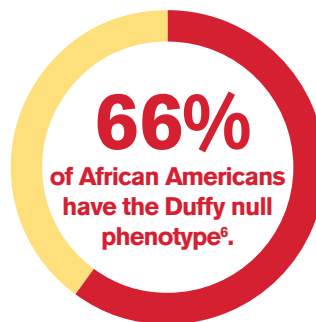


### Don't have

- Increased infection risk.
- Increased risk of immunocompromise.



DANC is common in people of African, Middle Eastern, Caribbean, and West Indian genetic ancestry<sup>5</sup>.



However, many people who self-report other race or ethnic backgrounds will also have the Duffy null phenotype.

## Low ANC does not always equal neutropenia

### Low ANC

The result of a blood test showing that the number of neutrophils in the peripheral blood is below the current ANC range for the age of an individual.



### Neutropenia

An abnormality detected by a decrease in the number of neutrophils and often associated with an increased risk of infection and/or other clinical symptoms.

## People with DANC face health disparities<sup>1,5,7</sup>

My chemotherapy dosage was reduced unnecessarily, putting me at greater risk of poor outcome.



I've been excluded from clinical trials.



I've received unnecessary testing, including a bone marrow biopsy.



I've been denied azathioprine for my autoimmune disease.



**References:** 1. Atallah-Yunes SA, et al. Blood Rev. 2019;37:100586; 2. Charles BA, et al. PLoS One. 2018;13:e0194400; 3. Chang EY, et al. Blood. 2018;132 (Supplement 1):2546; 4. Legge SE, et al. Hum Mol Genet. 2020;29:3341-9; 5. Howes RE, et al. Nat Commun. 2011;2:266; 6. Merz LE, et al. Blood Adv. 2023;7:317-20; 7. Borinstein SC, et al. J Cell Mol Med. 2022;26:3628-35.

