

Seminar

Ethnic Neutropenia

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A relative and absolute neutropenia has been described in black Africans, African Americans, Arabs (Saudi Arabians, Palestinians), and Jewish Yemenites (ethnic or racial neutropenia).¹⁻³

The total body neutrophils have been found to be the same in adults from West Indies living in the UK as in the white Britons, but individuals from West Indies have a greater number of neutrophils in the bone marrow storage pool, while Europeans have more in circulation; provocation of a neutrophil response, either experimentally by exercise or by natural infection, leads to rises to the same level in both races. There is probably a genetic factor underlying ethnic neutropenia, but environmental factors may also play a role since the neutrophil count rises with higher socioeconomic status in Africans, and declines in Europeans living in West Africa.^{1,3,4}

Note: peripheral blood and bone marrow films of people with ethnic neutropenia are normal.

- Consider secondary causes of neutropenia e.g. HIV, splenomegaly, drugs, hairy cell leukaemia, and acute leukaemia (particularly acute promyelocytic leukaemia) before a diagnosis of racial neutropenia is made.
- Chronic fevers with neutropenia can arise from malaria, disseminated tuberculosis (often with a negative tuberculin skin test), visceral leishmaniasis, brucellosis, and HIV infection.^{5,6}

Table 1 shows the normal leukocyte counts in 123 non-elite healthy blood donors from Nigeria in comparison with Europeans (From: Cook GC, Zumla AL. Manson's Tropical Diseases, 22nd Ed., 2008).

Remember: the neutrophil count does not drop below $1.0 \times 10^9/l$ in black Africans.

TABLE 1. Normal leukocyte counts in tropical Africa and Europe ($\times 10^9/l$).¹

	Nigeria	Europe
WBC, mean (range)	5.1 (2.6-10.2)	7.4 (4.5-11.0)
Neutrophils, mean (range, percentage)	2.8 (1.1-7.1 or 30-85%)	4.4 (1.8-7.7 or 40-75%)
Lymphocytes, mean (range, percentage)	2.1 (0.7-3.1 or 15-60%)	2.5 (1.5-4.0 or 20-45%)
Monocytes, mean (range, percentage)	0.13 (0-1.3 or 0-8%)	0.3 (0.2-0.8 or 2-10%)
Eosinophils, mean (range, percentage)	0.11 (0-2.0 or 1-30%)	0.2 (0.04-0.4 or 1-6%)
Basophils, mean (range, percentage)	0.002 (0-0.02 or 0-1%)	0.01 (0-0.1 or 0-1%)

References

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