

NYT. 12/24/02. *The Palette of Humankind* by Nicholas Wade

Humankind falls into five continental groups - broadly equivalent to the common conception of races - when a computer is asked to sort DNA data from people from around the world into clusters.

The major groups are African (orange), Europeans and Middle Easterners (blue), East Asians (pink), Melanesians (green) and American Indians (purple). Genomes of people from Central Asia, such as the Hazara of Afghanistan and the Uygurs of western China, are a blend of European and East Asian, as might be expected for people living at a historical crossroads. Some Middle Easterners, like the Bedouin and the Mozabites of Algeria, carry an admixture of African genes.

The chart, generated by Dr. Marcus Feldman of Stanford and colleagues and published in the current *Science*, was made by sampling the DNA of 1,056 people from 52 of the many populations around the world. Each person's genome was sampled at 377 sites where the DNA breaks into a stutter of repeated short sequences. These repeats, though apparently without function, are useful in tracking human variation, and are also the elements used in DNA forensic tests of identity.

In the chart, each individual's genome is represented by a single line, colored according to its ancestry from each continental group. Black lines separate individuals from different populations.

The 52 populations were collected as part of the Human Genome Diversity Project. Major omissions include Australian aborigines and Indians. Both groups are in general unwilling to give their blood for genetic analysis.

Populations worldwide share most of their genetic variability in common. But since they dispersed from the ancestral human population, each has accumulated its own pattern of genetic differences through random change and natural selection. The chart is based on these genetic differences, not on the very much larger shared inheritance.