

The Evolution of Body Heat Conductivity, Skin and Brain Size in Human

A.I. Ibraimov

Laboratory of Human Genetics, National Center of Cardiology and Internal Medicine, Togolok Moldo str., 3, Bishkek, 720040, Kyrgyzstan

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ABSTRACT What is unusual about the human brain is that we are the only largish mammal whose brain size kept pace with our growth in body size. The plausible reason of this phenomenon is his skin, when after having lost its hair it became the largest and almost universal organ of sense, which begins functioning as early as in the prenatal period of human development. It is assumed that *H. sapiens* became the possessor of the largest brain among the primates after he has lost hair on his skin. Apparently skin became hairless as a result of evolution of condensed chromatin in the genome of the direct ancestors of a modern human. In particular in their karyotypes together with chromosomal Q-heterochromatin regions three pairs of autosomes (1, 9 and 16), and Y chromosome became the carriers of unusually large C-heterochromatin regions, which have lead to significant increase of body heat conductivity. In conditions of tropical Africa, where our ancestors inhabited, availability of skin covered with hair became a serious obstacle in keeping the temperature homeostasis, particularly in dissipation of excessive heat from the organism that finally has lead to hairlessness. Given this, the heat protection function of the hair cover was taken over by a large amount of subcutaneous adipose tissue.