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## PEOPLE OF THE HOLY LAND FROM PREHISTORY TO THE RECENT PAST

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**F**or approximately the first million years of settlement, the archaeological record for Israel shows that people were hunters and foragers, with limited technological resources, and needing a high degree of physical fitness and strength for survival. The climatic changes occurring during the Middle and Upper Pleistocene modified selective pressures operating on the human populations of Israel and surrounding regions. Marked shifts occurred in the distribution of African versus Asiatic biotypes and the human populations may have moved with them. If early hominids did not retreat south in response to cold spells, they would have had to cope with changing food resources and increased seasonality in their availability. Climatic change would also have affected the ability of these early hominids to survive. Many of the long-term physiological and morphometric adaptations favorable to survival in a hot climate are disadvantageous in a cold climate. Under such conditions both population movement and the development of new adaptive strategies may have occurred. Indeed, it has been suggested that the early Mousterian populations of Israel did not, in fact, adapt to changing climatic conditions, but migrated as did many of the other mammals. According to the proponents of this hypothesis, population replacement rather than evolutionary trends *in situ* account for the phenotypic changes recorded in the Mousterian of Israel.

The technological explosion that began in the Upper Paleolithic was associated in Israel with a marked change in subsistence strategies, causing a major shift in dietary adaptations and behavior. Hunting patterns changed, partly in relation to the changing biotype and partly in relation to new technologies. Grinding stones, querns and mortars appearing in Kebaran and Natufian sites are indicative of new ways of preparing food. The advent of agriculture and animal domestication in the Neolithic, produced a further shift in the pattern and intensity of selective pressures, that accelerated in response to the new developments of the Chalcolithic and recent periods. The characteristics that make a successful hunter are not necessarily those that make a successful farmer, tradesman or statesman. Deficiencies in body size and physical fitness are less critical for survival, and can be compensated for by

improved technology, the use of pack animals and servants or slaves.

The development of agriculture and animal domestication in the Neolithic, greatly modified the relative quantity and availability of food staples utilized, while the introduction of pottery at the end of this period facilitated new methods of food preparation, and specifically the preparation of soft, boiled foods. These changes further modified selective pressures affecting human populations. However, the advantages of a more reliable food supply were partially offset by the associated increase in disease rates. The aggregation of large numbers of people in permanent or semi-permanent settlements facilitated the spread of disease. The absence of adequate methods of sewage and garbage disposal resulted in an increase in pests as well as contamination of water supplies. Use of stored foods meant greater susceptibility to infection through food spoilage or contamination from pests, as well as a reduction in its vitamin content. Husbandry involving closer contact with animals, increased the risk of infection from animal-borne disease, while milk consumption exposed people to tuberculosis and brucellosis. This scenario of changing environmental pressures constitutes some of the selective pressures operating on the Holocene populations of Israel. However, Israel has also been the scene of repeated migrations, that have contributed to admixture and/or population replacement at various times. The evolutionary trends that have taken place in the populations of Israel, in relation to changing adaptations, need to be examined critically and distinguished from change through gene-flow in all periods.

### **Population diversity and microevolutionary trends**

This synopsis of the prehistoric and historic populations of Israel will focus on two main topics: first, the extent of population diversity in the Middle Paleolithic, and second, microevolutionary trends and population displacement associated with changing adaptations and cultures in the Epipaleolithic to recent periods. Two groups of hominids, one identified as Neandertals and

