

# Geographic Patterns of Ethnic Groups in the United States

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**Abstract.** The geographic distributions of 11 major ethnic groups within the United States, based on 1960 census data, are illustrated by computer-generated state economic area maps. The Scandinavian, German, and Russian ethnic groups were similarly concentrated primarily in the North Central region, while the Irish,

Polish, Other East European, and South European groups were clustered predominantly in the Northeast. Other ethnic groups had patterns which were different from either of the above. These maps correspond to the atlases of mortality from cancer and other diseases. (*Am J Public Health* 1984; 74:133-139.)

## Introduction

It is well known that disease patterns vary geographically, both internationally and among ethnic groups within the same country.<sup>1-4</sup> Geographic variations in cancer occurrence are thought to reflect environmental differences in well-defined personal habits (e.g. smoking, alcohol consumption, sun-bathing), and in less defined habits of lifestyle-behavior and/or diet (e.g., age at first pregnancy, low-fiber diet), as well as occupational exposures, medicaments, radiation, or differences in patterns of definable hereditary or congenital syndromes.<sup>5</sup>

The National Cancer Institute has published atlases of mortality for 35 cancer sites by county or state economic area (SEA) for the White<sup>6</sup> and non-White<sup>7</sup> populations in the United States and a recent companion atlas mapping geographic patterns of selected diseases other than cancer.<sup>8</sup> These maps have provided a means for quickly assessing areas of high or low disease risk. Stone, *et al*,<sup>9</sup> published a series of comparable maps showing the geographic concentration of 18 major manufacturing industries in the US. Comparison of these patterns with geographic variation in cancer mortality has been useful as a first step in identifying correlations between industrial exposures and cancer.<sup>10</sup>

Ethnic groups vary according to alcohol consumption, cigarette smoking, urbanization,<sup>4</sup> socioeconomic status,<sup>11</sup> occupation, fertility patterns,<sup>12</sup> and diet.<sup>13,14</sup> Environmental differences related to ethnicity have been implicated in the occurrence of many chronic diseases.<sup>11-18</sup> Maps showing geographic variations of 11 major ethnic groups in the US are presented. These may be useful as a preliminary step in determining whether cultural, environmental, or genetic factors related to ethnicity may contribute to the geographic variations in cancer and other diseases.

## Methods

Numbers of persons of foreign stock in the US—defined as the sum of the foreign-born and the native population of foreign or mixed parentage, by country of origin—were available at the county level from 1960 census statistics.<sup>19</sup> These numbers were aggregated by the Bureau of the Census to SEAs, which are single counties or groups of counties with similar economic and social characteristics<sup>20</sup> and subse-

quently combined, by country of origin, into 11 major ethnic groups: BRITISH—England, Scotland, Wales; IRISH—Ireland, Northern Ireland; SCANDINAVIAN—Norway, Sweden, Denmark, Finland; GERMAN—West Germany, East Germany; OTHER MIDDLE EUROPEAN—Netherlands, Switzerland; POLISH—Poland; CZECHOSLOVAKIAN—Czechoslovakia; RUSSIAN—Russia, Lithuania; OTHER EAST EUROPEAN—Austria, Hungary, Yugoslavia, Romania; SOUTH EUROPEAN—Greece, Italy, Portugal; and LATIN AMERICAN—Mexico, Latin America. Proportions of the SEA population for each ethnic group were calculated and the SEAs classified into one of three categories based on this percentage: 1) less than 1.0%; 2) 1.0 to 4.9%; 3) 5.0% or greater. The geographic distributions of each level (“low,” “moderate,” or “high”) of foreign stock concentration were then illustrated on computer-generated maps of the United States (Figures 1-11).

## Results

Similar geographic patterns were found for the SCANDINAVIAN, GERMAN, and RUSSIAN ethnic groups, with concentrations primarily in the North Central region, while the IRISH, POLISH, OTHER EAST EUROPEAN, and SOUTH EUROPEAN groups were clustered predominantly in the Northeast. LATIN AMERICAN concentrations were high in the southwest, especially near the US/Mexican border, and in the southern tip of Florida. The distributions for the BRITISH, OTHER MIDDLE EUROPEAN, and CZECHOSLOVAKIAN groups did not follow any of the above patterns.

## Discussion

Information as to whether an ethnic effect may be genetic, cultural, or environmental may be gained from comparing the direction and strength of migrant rates with the mortality rankings in the associated country of origin.<sup>4</sup> A match between the two would indicate a genetic factor or cultural pattern (e.g., dietary practice(s), use of alcohol), which is maintained after migration; differences in the two would suggest environmental factors which are different in the host country than in the country of origin (e.g., industrial exposures, diet, or other lifestyle-behavior patterns).

The ethnic maps presented here correspond to the mortality maps for cancer and other diseases<sup>6-8</sup> and together offer a means of quickly checking consistencies in ethnic concentrations and disease patterns. The ethnic maps also provide a comprehensive view of the geographic locations of ethnic groups in this country. Thus, while it may be well-known that large numbers of Polish immigrants, for example, have settled in the northern metropolitan areas of

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Milwaukee, Chicago, Detroit, and Buffalo, other high concentrations of this ethnic group in upstate New York and western Massachusetts are less known.

For many cancers with long lag time, it is appropriate to characterize the population historically. However, recognizing the potential for shifts in geographic concentrations of ethnic groups over time and the need for up-to-date information in order to confirm observed aggregate associations using studies on individuals, we reviewed the available data from the more recent Censuses for changes in these concentrations since 1960. Reports from the 1970 Census revealed similar variation in foreign stock concentrations,<sup>21</sup> suggesting relative stability through time. Although there has been a recent and dramatic influx of Latins, especially Cubans, preliminary reports from the 1980 Census<sup>22</sup> have shown them to settle primarily in areas where there were already high concentrations of Latins. The detailed 1980 Census data are expected to be available during 1983. Unfortunately, large numbers of Cubans entering the United States after April 1980 will not be reflected in the 1980 Census.

Although using per cent of the total population as the measuring instrument may mask high concentrations of certain ethnic groups in highly populated areas (e.g., the large number of Puerto Ricans in New York City which does not show up as a high concentration in the 1960 map for Latins), this measure would be more pertinent to the identification of areas for study where there might be less admixture in cultures. Aside from a few highly populated areas like New York City, population distributions of ethnic groups from the 1970 Census were found to be very similar to the patterns for per cent of the total population from the 1960 Census, suggesting that the measuring instrument offers a relatively good indication of high proportions of a particular ethnic group.

Caution must be utilized in the interpretation of these maps since foreign-stock concentration is not a measure of lineage per se, but rather a measure of the concentration of relatively new immigrants (two generations) in a particular area. However, new immigrants tend to settle where there

are earlier concentrations of immigrants from the same European country or village.<sup>4</sup>

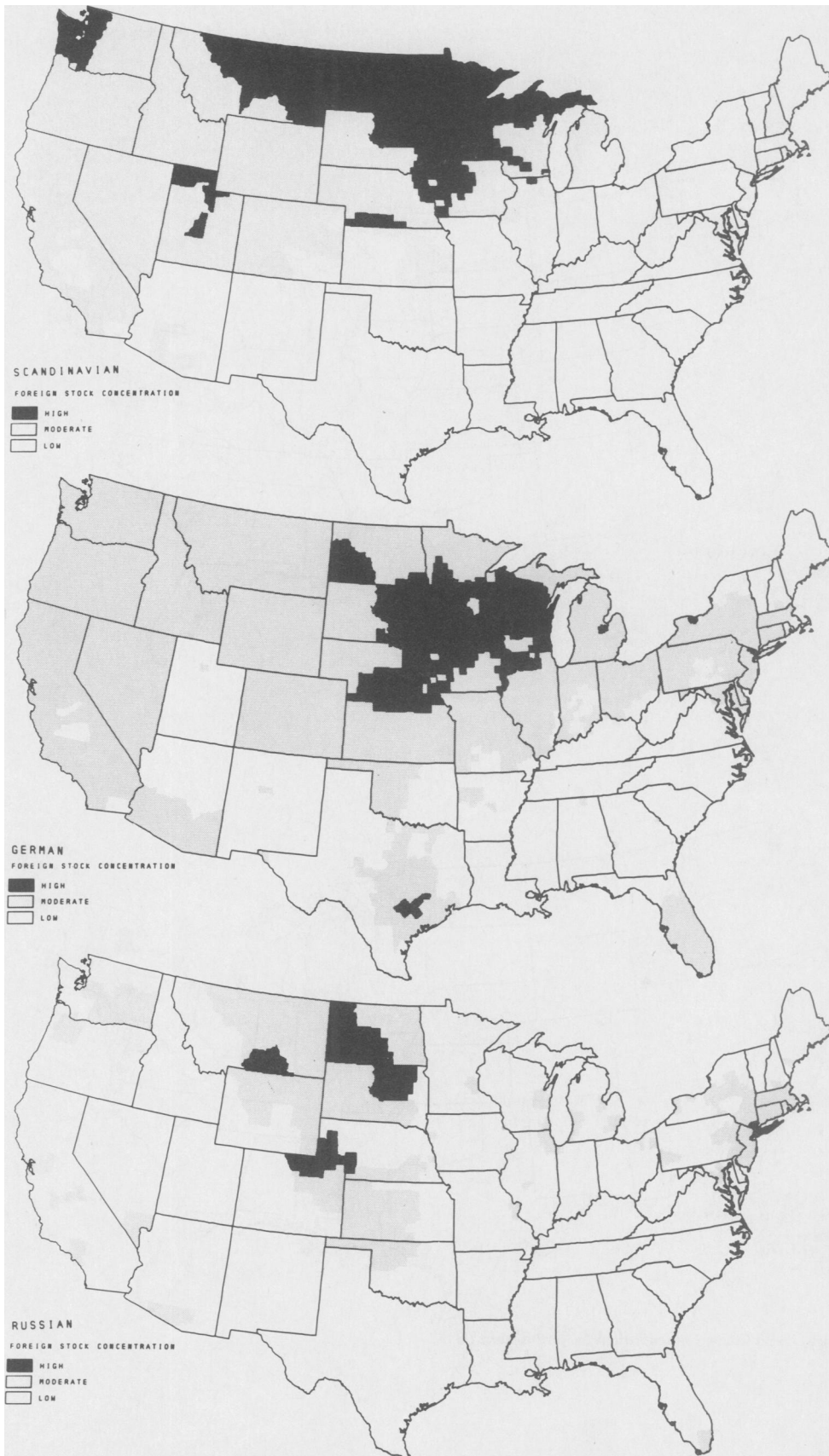
Analyses of aggregate data are subject to a number of potential biases, most important of which is the ecological fallacy.<sup>23</sup> Concomitant geographic variation in disease mortality and ethnic concentration does not necessarily denote an association but may offer leads to causal factors which can then be pursued by correlation or analytic studies, where the effects of confounding demographic variables can be controlled.

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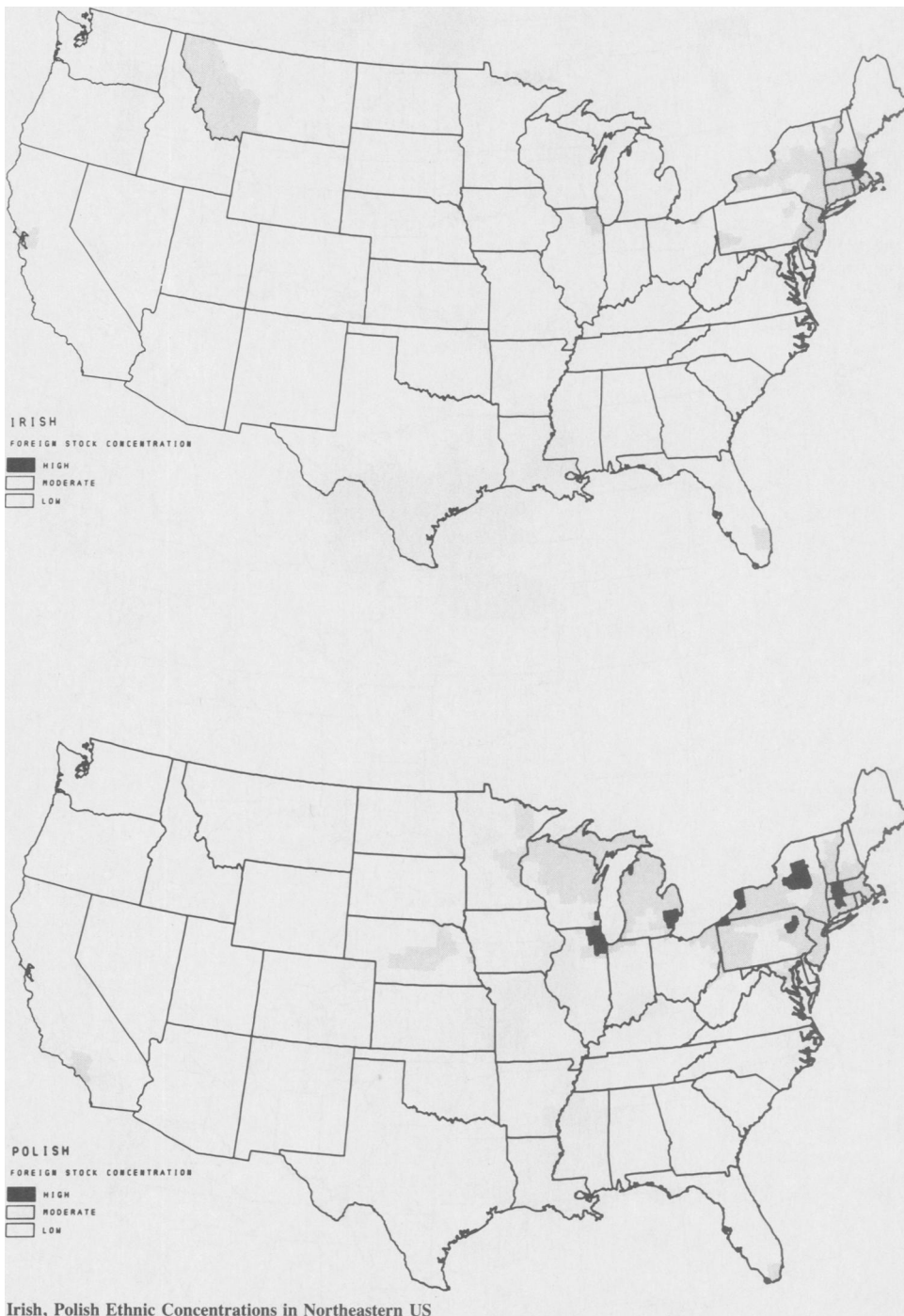
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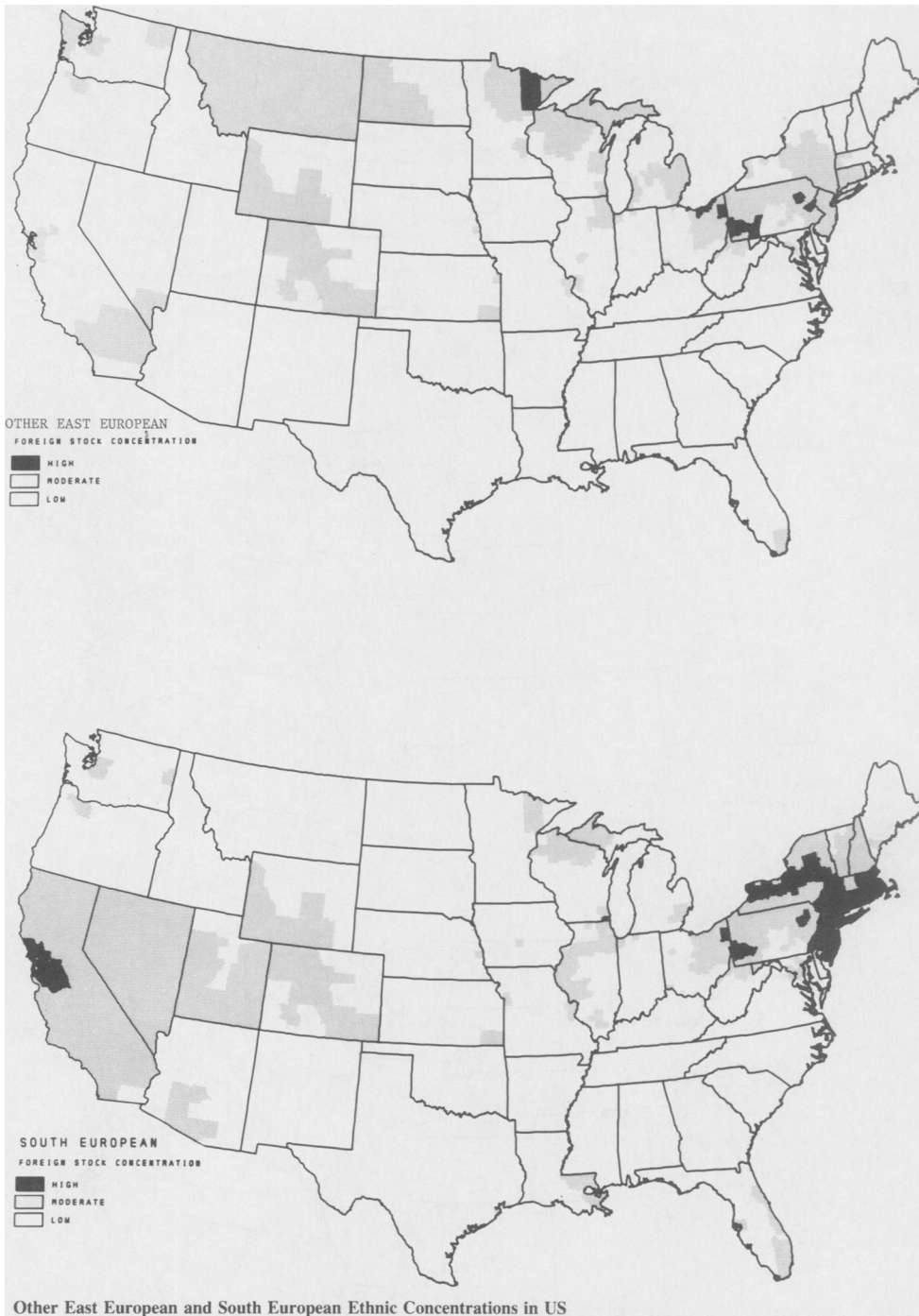


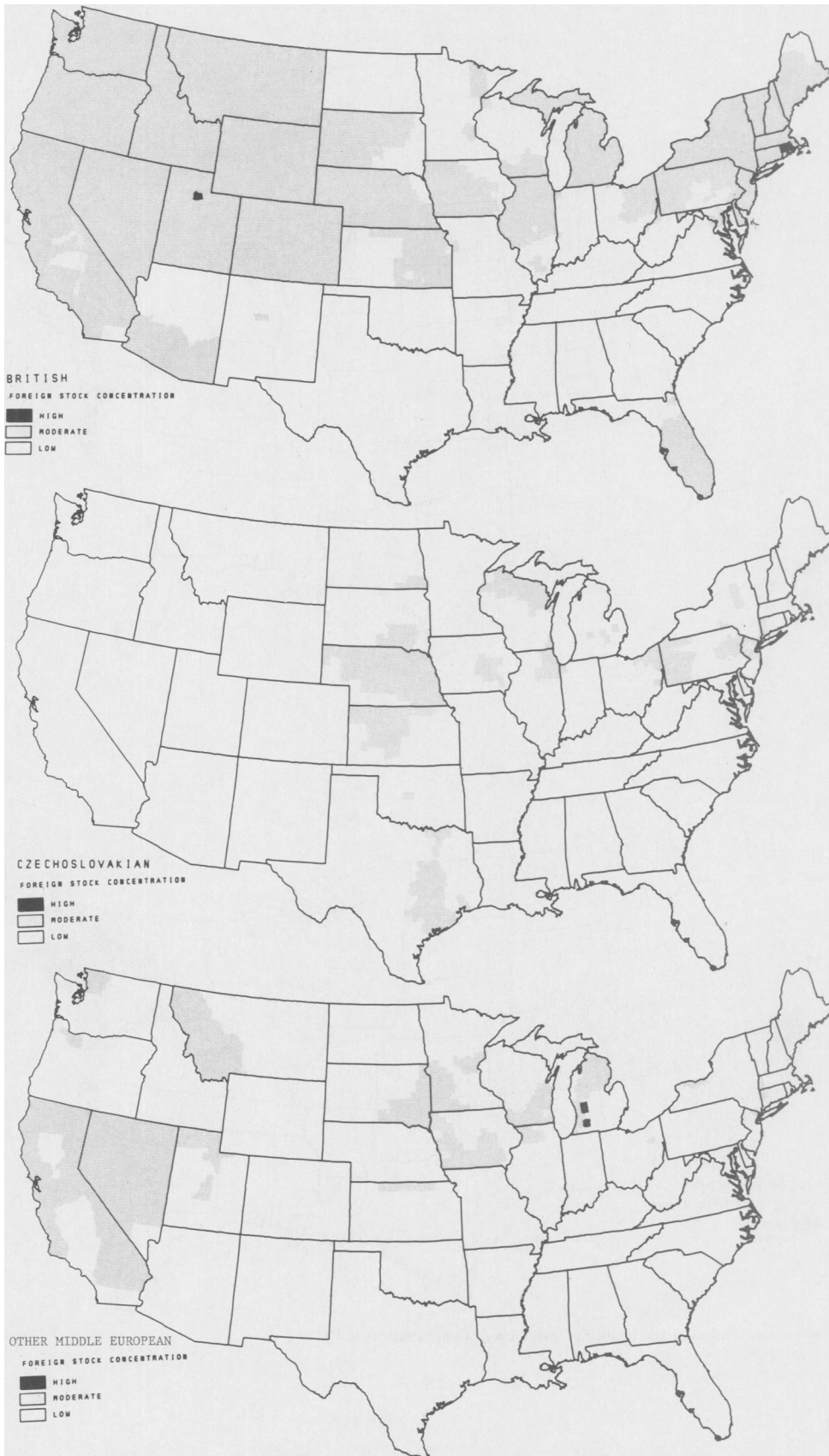
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Scandinavian, German, and Russian Ethnic Concentrations in N. Central US







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## ERRATA

*In*: Gergerich SG, Priest JD, Boen JR, Straub CP, Maxwell RE: Concussion Incidence and Severity in Secondary School Varsity Football Players. *Am J Public Health* 1983; 73:1370-1375. The Journal regrets that the footnotes in the above published paper were positioned incorrectly in several instances. We apologize to the authors and to our readers for the mix-up. A corrected version of the paper is available on request to the first author: Susan Goodwin Gerberich, PhD, Assistant Professor, School of Public Health, University of Minnesota, 1325 Mayo Building, 420 Delaware Street, SE, Minneapolis, MN 55455.

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*In*: Rogot E, Feinleib M, Ockay KA, Schwartz SH, Bilgrad R, Patterson JE: On the Feasibility of Linking Census Samples to the National Death Index for Epidemiologic Studies: A Progress Report. *Am J Public Health* 1983; 73:1265-1269. In the footnote to column 1, p 1265, the primary affiliations of two authors should be corrected as follows: Dr. Manning Feinleib was with the National Heart, Lung and Blood Institute at the time of the study and is currently Director of the National Center for Health Statistics; Ms. Ockay was with the Bureau of the Census, and is currently with the State of Florida, Department of Corrections.