It is merely necessary to delete or ignore irrelevant members and, in the remainder, to cross out any genotypes inconsistent with the tests. The probabilities for both individuals and for their descendants are then modified so that the various genotypes sum to one (Figs. 3 and 4). It may be helpful to specify the sexes by adding the traditional arrow and cross symbols to define sex; although irrelevant to the results, this makes documentation clearer.

We have assumed, for simplicity, the approximate round numbers of an incidence of 1/1,600, and a carrier proportion of 1/20 as well as a most common affected allele which is assumed to represent three-quarters of the mutant alleles and is capable of definitive detection or exclusion on testing. These values are similar to those published for Scotland: heterozygote frequencies have been inferred from the homozygote frequency, although, because of heterogeneity, this will be an underestimate and the biasses are too complicated to justify the complication of unrounded numbers. As more alleles come to be within range of tests, they can be grouped together and combined for purposes of prediction so that the only changes needed to the diagram are those derived from the combined gene frequency of the group of testable alleles. A copy of the drawing program, in Macdraft, is available on receipt of a disk formatted for a Macintosh.

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Am. J. Hum. Genet. 47:1028, 1990

Re: Book Review of *New Developments in Biotechnology*

To the Editor:

Several issues raised in the book review by McFadden (1990) of the Office of Technology Assessment (OTA) report *New Developments in Biotechnology* merit clarification. First, to avoid confusion with the four other volumes in the series, the report should more properly be referred to as *New Developments in Biotechnology: Patenting Life.* Second, the reviewer properly points out that issues such as who owns commercially exploited tissues and government funding and regulation of biotechnology are not covered. He fails to acknowledge, however, that, as the book states, the four volumes preceding it (i.e., *Ownership of Human Tissues and Cells, Public Perceptions of Biotechnology, Field-testing Engineered Organisms,* and *U.S. Investment in Biotechnology*) encompassed these issues.

Finally, the book is available, as are all OTA reports, from the U.S. Government Printing Office in Washington, DC, for $8.50—a price tag that would *not* "seem to preclude a general interest readership of laymen." The $69.75 price quoted pertains to the private publisher's version of OTA's report. Within certain guidelines, OTA provides—for no cost or future royalties—camera-ready copy to publishers, from which they may republish and profit.

Roger C. Herdman
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Reference

McFadden RR (1990) Book review of *New developments in biotechnology.* Am J Hum Genet 47:171

Am. J. Hum. Genet. 47:1028–1030, 1990

Family Cell Lines Available for Research

To the Editor:

Diabetes is a major health problem. The disease in its most common form—non–insulin dependent (type 2) diabetes—shows strong genetic determinants. Although the pattern of inheritance is unclear, this late-onset disease may be caused by a dominant autosomal gene. In the less common form of diabetes mellitus—i.e., insulin-dependent (type 1) diabetes—which develops at any age but primarily affects the young, certain HLA specificities are known to provide an increased risk. These HLA determinants are necessary—but not sufficient—for the disease to develop. A second or third gene for type 1 diabetes may be necessary. In addition, rare forms of diabetes mellitus that are due to single point mutations in either the insulin gene or the insulin receptor gene have been documented. These monogenic forms of diabetes mellitus, however, hardly contribute to the overall prevalence of the disease.

Progress in understanding the patterns of inheritance of diabetes has been slow. Many scientists have attributed the lack of progress not so much to the lack of genetic markers and chromosome-specific gene probes as to the availability of families with more than one affected member. The need for a data base of families with diabetes mellitus and of immortalized cell lines and/or DNA to be made available to researchers not only within the field of diabetes but in any scientific discipline was voiced at the Second International Conference of Diabetes, held in Monaco in the spring of 1988. The scientists' recommendation at this meeting was that such cell lines should be made available for research aimed at understanding the complex pattern of inheritance of type 1 and type 2 diabetes. The National Diabetes Advisory Board has made a similar recommendation. Recently interest has also been focused on the fact that not all individuals with diabetes develop diabetic complications. For example, diabetic nephropathy develops in only 40%–50% of affected individuals. There is data indicating that, if the affected individual has a diabetic sibling or parent with this complication, the risk of developing the same complication is increased. Diabetic complications have been associated with alterations in either blood pressure or blood lipids, and there is increasing interest to uncover genetic linkage or association to complications.

The National Disease Research Interchange (NDRI) is a Philadelphia-based nonprofit organization which supplies tissues and organs to researchers. An initiative has been taken by NDRI to form the Human Biological Data Interchange (HBDI) to create a data base of families affected by diabetes. This endeavor of HBDI has recently become successful through an effective partnership with the Juvenile Diabetes Foundation International (JDFI). This organization has used its mailing list to approach its membership with questionnaires to obtain useful pedigrees for investigative purposes. As of May 1990 more than 10,000 questionnaires have been screened, and a family assessment committee of the HBDI has evaluated the pedigrees to recommend Epstein-Barr virus (EBV) transformations to prepare cell lines. The first catalog of immortalized cell lines has now been made available, in collaboration with Coriell Institute in Camden, NJ.

The human cell lines available from the Coriell Institute are certified to be mycoplasma free. The cells are available as liquid-nitrogen frozen-stock cultures. The HBDI and the Coriell Institute plan to make DNA available also.

Each family in the catalog has been verified by HLA typing. HLA typing and clinical information will be available through HBDI. The families will remain anonymous but have agreed to be approached for additional questions. HBDI will be the medium to pass on information from the families to investigators. Since type 1 diabetes is a disease which may develop at any age, the families will be continually followed to record whether any additional family member develops the disease. This information will also be made available from HBDI.

The success in preparing this first HBDI catalog was only possible because of the generosity of NDRI; a special grant from the JDFI; and volunteer contributions from both Dr. Pablo Rubinstein (The New York Blood Bank Center, New York), who HLA typed the families, and Michael Sheehy, who shared data on several multiplex families.

The HBDI catalog of diabetic families will continue to grow, depending on available funds and user interest. It plans to base this growth on questionnaires to be sent to families in 120 JDFI chapters in the United States, Canada, and at least 12 other countries. HBDI welcomes proposals for initiating projects to obtain cell lines from twins, families with both type 1 and type 2 diabetes, siblings with diabetes, 3-generation families, families with type 1 diabetes in addition to other autoimmune diseases, families with several diabetics with and without complications, etc. On the basis of project proposals, HBDI will select and contact families for blood samples and for subsequent EBV transformations.

We believe that the availability of these diabetes families will be of great interest to the scientific community in promoting studies on the genetic susceptibility to type 1 and type 2 diabetes and its complications. In times of reduced funding from NIH, these cell lines offer an inexpensive resource for studying genetic aspects of diabetes mellitus. The data base of diabetic families is a public domain and is made available to the scientific community for as low a price as possible. Scientists interested in obtaining these cell lines for research can contact the HBDI program, National Disease Research Interchange, 2401 Walnut Street, Suite 408, Philadelphia, PA 19103; (215)557–7361; FAX (215)557–7154.

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