

# Public Health Briefs

## Impact of HIV Antibody Testing on Changes in Sexual Behavior among Homosexual Men in The Netherlands

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**Abstract:** Between October 1984 and May 1986, 746 homosexual men, living in and around Amsterdam, The Netherlands, were surveyed at three consecutive six months periods regarding their sexual behavior. At the start of the study all subjects, of whom 234 (31 per cent) were HIV-Ab seropositive, were informed about their HIV antibody status. Seropositives initially reported more sexual partners than seronegatives; they also showed a greater reduction in the number of sexual partners and the number of partners with whom all forms of sexual practices were performed than did seronegatives. In both groups subjects were more likely to terminate orogenital intercourse than anogenital intercourse and masturbation. (*Am J Public Health* 1988; 78:1575-1577.)

### Introduction

Studies on sexual behavior change show a reduction in the number of sexual partners and in high-risk sexual activity among homosexual men in the United States and Canada.<sup>1-6</sup> It has been suggested that serological testing of homosexual men on a wide scale may help reduce the (sexual) transmission of the human immunodeficiency virus (HIV).<sup>7</sup> In the present report the relation between the disclosure of the HIV antibody status and subsequent sexual behavior is analyzed.

### Methods

#### Study population

The examined population consisted of 746 healthy asymptomatic homosexual men, who volunteered to participate and were living for the most part in and around Amsterdam, The Netherlands. Since participants were self-selected, their representativeness is unknown. Of the subjects, who were enrolled between October 1984 and May

1985, 234 (31 per cent), were HIV seropositive and 38 seroconverted during the study period. Eight per cent of the seronegatives and 11 per cent of the seropositives reported having two or more physical complaints (tiredness, coughing, vomiting, night sweats, fever, diarrhea, etc.) during six months preceding entry. One year later, at the end of the study period, these percentages were 15 per cent and 25 per cent, respectively. Complaints were not related to the level of sexual activity. A more detailed description of the population under study has been published elsewhere.<sup>8</sup>

The participants were seen regularly at the Municipal Health Service of Amsterdam. Presence of HIV antibody was established with an enzyme linked immunosorbent assay (ELISA) (Vironostika, Organon, Oss, The Netherlands) and confirmed by immunoblotting.<sup>9</sup> A self-administered questionnaire was completed after each of three consecutive six month periods. On each occasion the number of male sexual partners and the number of partners per sexual technique during the prior six months were reported. Participants were informed about their HIV antibody status after they completed their first questionnaire. Among seronegative participants testing was repeated after the second and third questionnaire.

#### Data Analysis

Shifts in the type of sexual techniques performed (e.g., from anogenital intercourse to masturbation) were studied by analyzing the relative importance of each sexual technique in the total pattern of practiced sexual techniques (see Appendix). During the study 207 individuals were lost to follow up. Available data show that the sexual behavior of these participants did not differ from that of those remaining. The 38 seroconversions were excluded from the analysis. Reallocation of these individuals yielded similar results. The actual number of subjects in the analysis on the pretest, posttest, and follow-up was respectively: 234, 198, and 166 seropositives and 474, 426 and 344 seronegatives.

### Results

When entering the study, both seronegative and seropositive participants had a mean age of 35 years and had been homosexually active for 17 years. Seropositives reported a higher mean lifetime number of sexual partners (1,148) than seronegatives (715). The percentage of individuals practicing either only insertive or only receptive anogenital intercourse remained constant during the two follow up interviews (Figure 1). Those practicing both techniques decreased in seropositives from 74 per cent to 43 per cent and in seronegatives from 48 per cent to 28 per cent.

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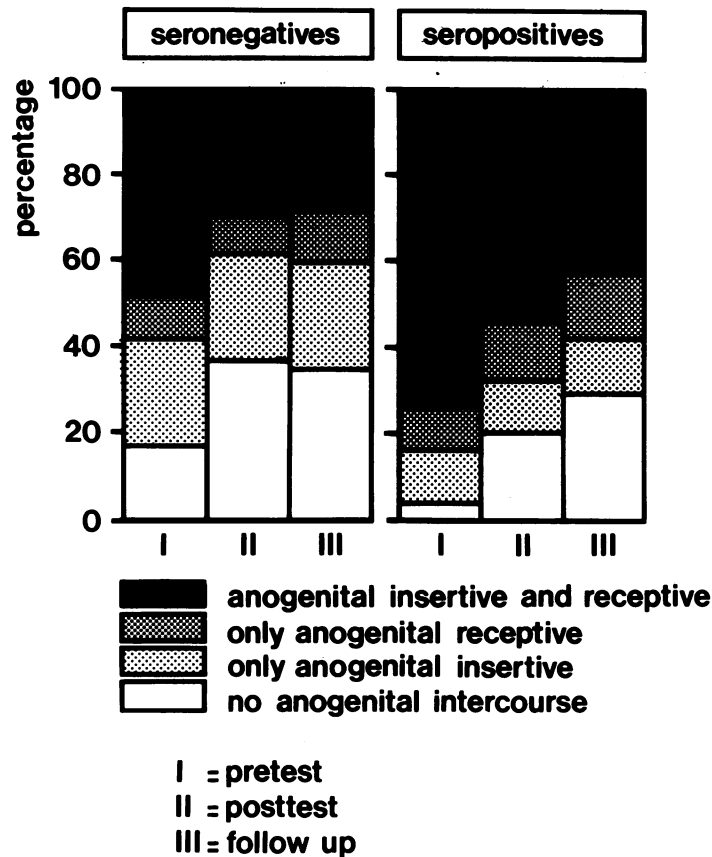


FIGURE 1—Percentage of HIV Seronegatives or Seropositives, According to Sexual Technique Practices, among Homosexual Men Participating in the AIDS Study, Amsterdam, The Netherlands, 1984–86

A decrease in the mean number of sexual partners during the last six months was apparent in seropositives (from 22 to 10) and in seronegatives (from 15 to 12), the reduction seen in seropositives being substantially greater than that in seronegatives.

Seropositives also showed a greater reduction in the number of partners with whom they performed all forms of sexual contact (Figure 2). These changes occurred primarily during the pretest to posttest period. At the start of the study, manual sexual contact was relatively more important among seronegatives while orogenital and anogenital intercourse were more important among seropositives. Overall, manual sexual contact was more important than anogenital intercourse. During the two follow-up interviews, the relative importances of manual sexual contact and anogenital intercourse remained constant, while that of orogenital intercourse declined in both groups, but more among seropositives.

*Discussion*

In both groups, changes consisted primarily of a reduction in the number of partners. A shift to safer sexual practices appeared to be less common. While the number of partners with whom anogenital intercourse is performed showed a sharp decrease, especially in seropositives, the relative importance of this technique remained stable. A decrease in orogenital intercourse is observed in the number of partners as well as in its relative importance. This means

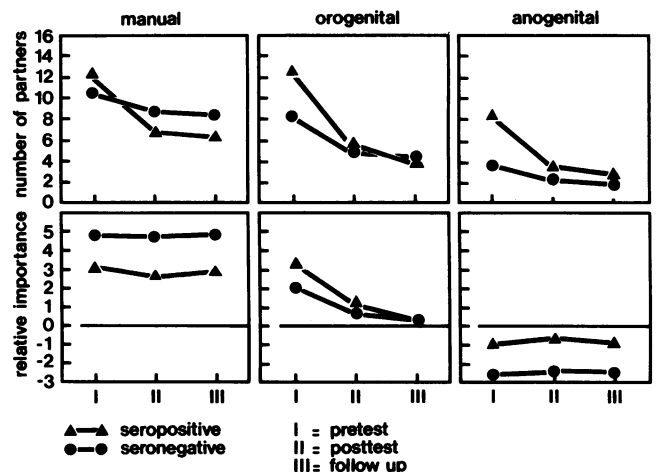


FIGURE 2—Mean Number of Partners and Relative Importance of Three Sexual Techniques among Homosexual Men Participating in the AIDS Study, Amsterdam, The Netherlands, 1984–86

that the individuals studied shifted from orogenital intercourse to other sexual techniques more than they shifted from anogenital intercourse.

Apart from serological testing and its result, many other factors might have influenced the behavior of the men under study. Counseling for example may interact with the effect of testing itself. Although there was no formal pretest and

posttest counseling in this study, diverse forms of information and social support were given by the nurses who maintained contact with the participants. Testing was voluntary, with informed consent and under the strict condition of confidentiality. Because ethical and practical considerations prohibit experimenting with the factors mentioned above, their individual contribution to the effect of testing cannot be distinguished.

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#### APPENDIX

The relative importance of a sexual technique was determined by the computation of so called deviation contrasts, or deviations from the grand means.<sup>10-12</sup> A practical description of this procedure is found in the SPSSX Users Guide,<sup>12</sup> pp 494-495. New variables were computed for each individual and each sexual technique on pretest, posttest, and follow-up, by subtracting from the number of partners on a specific technique, the mean of the number of partners with whom the remaining techniques were performed. An example may clarify this procedure: if an individual performs masturbation with two partners, orogenital intercourse with six partners, and anogenital intercourse with eight partners, the relative importance of masturbation is  $2-(6+8)/2 = -5$ , of orogenital intercourse  $6-(8+2)/2 = 1$ , and of anogenital intercourse  $8-(2+6)/2 = 4$ . Twelve months later, if this individual practices masturbation with eight partners, orogenital intercourse with two partners, and anogenital intercourse with zero partners, the relative importance of masturbation has increased to  $8-(2+0)/2 = 7$ , of orogenital intercourse has decreased to  $2-(8+0)/2 = -2$ , and of anogenital intercourse has decreased to  $0-(8+2)/2 = -5$ . It is concluded that a shift has occurred in the pattern of practiced sexual techniques from orogenital and anogenital intercourse in the direction of masturbation. Sexual techniques included in this procedure were: oral, manual, orogenital, anogenital, oroanal, anobrachial, anodigital, dildo use, rectal douching, scat and watersports.

## Changes in the Distribution of Physicians in Rural Areas of Minnesota, 1965-85

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**Abstract:** The purpose of this study was to assess changes in the physician-population ratio in non-SMSA Minnesota counties between 1965 and 1985 using county specific data published by the American Medical Association. The physician-population ratio actually decreased by 2 per cent for primary care physicians and by 11 per cent for family practitioners in the non-SMSA counties. The large increase in the number of physicians in Minnesota has not translated into improved access to primary care physicians in Minnesota's rural areas. (*Am J Public Health* 1988; 78:1577-1579.)

#### Introduction

Physician manpower policy in the late 1960s was dominated by a shortage of primary care physicians in rural and inner-city areas. Federal and state governments responded to this problem by funding massive increases in the number of

medical school graduates, the establishment of new primary care residency programs, and development of primary care service programs for the underserved.<sup>1</sup> Events in Minnesota which have mirrored the national response over the last 20 years resulted in a 50 per cent increase in the number of physicians in Minnesota between 1965 and 1977.<sup>2</sup>

By the late 1970s, concern had shifted from a physician shortage to an impending physician surplus.<sup>3</sup> It was asserted that a surplus of physicians would induce enough underutilized physicians to "diffuse" from the larger cities into ever smaller communities and resolve the physician manpower problem.<sup>4,5</sup>

This study was designed to assess whether "diffusion" was in fact occurring in Minnesota and, if so, whether it was sufficient to redress the deficits in primary care physicians identified 20 years ago.

#### Method

Population figures for each county in Minnesota were obtained from the 1970 census and projections of 1985 population.<sup>6</sup> Counties were classified as either "SMSA" or "non-SMSA" based on the 1977 US Department of Commerce definition of Standard Metropolitan Statistical Areas. The "non-SMSA" counties were then divided into the

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