

A Role for 5Alpha-Reductase Activity in the Development of Male Homosexuality?

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ABSTRACT: Higher body hair with lower mesomorphism ratings were observed in Caucasian homosexual men compared with the general male population, reflecting elevated 5alpha-reductase (5 α R) activity, and higher dihydrotestosterone-to-testosterone (DHT-to-T) ratio, in sharp contrast to 46,XY 5 α R 2 deficiency subjects, who are often born with ambiguous, or female genitalia, but tend to grow up to be muscular, heterosexual men with very little body hair, or beard. One study also showed them scoring around dull normal IQs. A greater prevalence of liberal body hair growth in men with higher IQs and/or educational levels was also observed in several samples. The exceptions to this statistical trend are too unsettling, however. Nevertheless, the results of a number of published studies, including one showing higher DHT-to-T ratio in homosexual men, done with different objectives over a span of 80 years, together strongly support these findings. Furthermore, in an animal model, "cognitive-enhancing effects" of "5 α -reduced androgen [metabolites]" were recently demonstrated.

KEYWORDS: body hair; mesomorphism; homosexuality; intelligence; 5alpha-reductase activity

INTRODUCTION

The three externally prominent tissue effects of androgens, body hair growth, mesomorphism, and voice depth, are rarely seen in equal proportions in a given individual, although androgens might be expected to promote all three uniformly. (See the increase in both body hair and musculature in two testosterone [T] treated Klinefelter's syndrome patients, one white and the other black¹) The nature and significance of this easily recognizable, important phenomenon, such as liberal body hair seen in a minimally mesomorphic male with or without a high-pitched voice, have not been properly addressed in the literature.

Steroid 5alpha-reductase (5 α R) converts T to dihydrotestosterone (DHT). DHT is needed for the development of external genitalia of the male fetus and later for body hair growth.^{2,3} 5 α R 2 deficiency 46,XY pseudohermaphrodites, who are born with ambiguous or female-looking genitalia and are often raised as girls, tend to become strikingly muscular men, with a minimal tendency for body hair growth, and small genitalia due to lack of DHT.^{2,3} Even when raised unambiguously as females,

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they are often sexually attracted to women.³ At least one major study⁴ showed that gay men had elevated DHT levels with higher DHT-to-T ratios, as opposed to 5 α R deficiency subjects of either gender. In females, 5 α R deficiency is of no consequence except that there is less body hair growth.⁵ Furthermore, gay men have larger genitalia.^{6,7}

Intriguingly, both male and female homosexuals are better educated. Anecdotal evidence for too high a proportion of homosexual and bisexual men among (Caucasian) creative artists and writers abounds. Mendez *et al.*⁸ noted below average intelligence in six of seven (with full-scale IQs of 103, 89, 87, 86, 69, 68, and 66) Mexican 46,XY 5 α R 2 deficiency patients from five different pedigrees, all of whom were reared unambiguously as females. However, this has not been systematically investigated in this *rare* condition.

METHODS

Body hair ratings were done on a scale of 1–9, using three reference sketches. Mesomorphism ratings were done on a scale of 1–7 using seven reference pictures from Sheldon's⁹ *Atlas of Men* that had been rated from 1–7. All ratings except those of the Mensa men were carefully done objectively. For statistical analysis, Student's *t* test, a one-way analysis of variance test, the chi square test, and the Pearson correlation were used.

RESULTS AND DISCUSSION

The body hair ratings (in the Polaroid pictures) of 51 Caucasian men self-identified as homosexual were higher ($P < 0.01$) and mesomorphism ratings were lower ($P < 0.001$) than those of a matched sample of 100 men from the general population and among all 380 clearly printed pictures of Caucasian men, aged 25–54, in Sheldon's⁹ sample (FIG. 1). The controls were not different. Although not appreciated so far, some 90 years ago Magnus Hirschfeld¹⁰ had indeed observed and recorded the unusual body hairiness in about 30% of 500 German gay men, as had Henry,¹¹ who meticulously recorded it in the physical examination section of 38 Caucasian gay men. Similar hairiness was found in less than 10% of several thousand Caucasian men from a large contingent of demobilized soldiers (aged [only] 18–24) from World War I.¹² (Sadly, Hirschfeld's work has never been recognized, a regrettable fact in view of the persecution he endured under the Nazis.) In both samples of gay men, as in the present sample, around 20% of Caucasian gay men were glabrous, which may have been an obstacle to appreciating the liberal body hair growth in many gay men. Furthermore, although there is the popular assumption that gay men are less masculine, and in the majority that may well be true, the accumulating evidence points to a process of "hypermasculization." As McFadden and Champlin¹³ write, "One parsimonious interpretation of these findings is that homosexual males and females both were exposed to higher than normal levels of androgens at some point(s) in development" (see Ref. 14). Hall and Kimura¹⁵ have apparently confirmed the mesomorphic deficiency of homosexual men.

BODY HAIR AND MESOMORPHISM RATINGS IN CAUCASIAN MEN

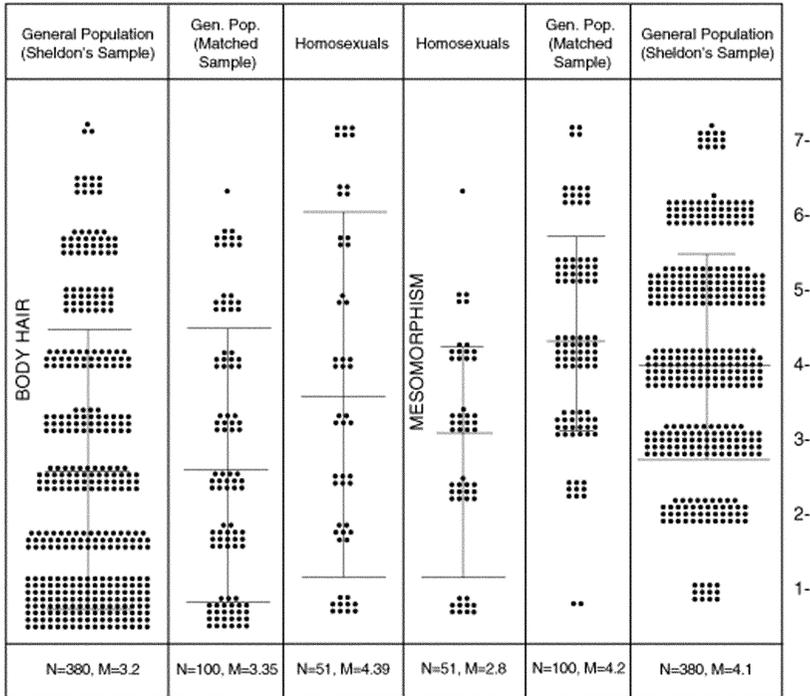


FIGURE 1. Fifty-one Caucasian homosexual men's half-naked (Polaroid) pictures were compared with 100 fairly matched, similar pictures from the general population and with all 380 clearly printed Caucasian men's pictures from Sheldon's⁹ "Atlas of Men," aged 25-54. Body hair ratings were done by two judges jointly, using three reference sketches, from 1-9. Mesomorphism (Mes) ratings were done by assessing muscular development or the potential for it, except in Sheldon's sample where Sheldon's own Mes numbers were used. Seven typical Sheldon's pictures, representative of each Mes number, from 1-7, were used. Each Polaroid picture in both groups was rated jointly by the same two judges, from 1-7, by careful comparison with each of the seven Sheldon pictures. The homosexual men were more hirsute ($P < 0.01$) but less muscular ($P < 0.001$) than both controls. The controls were not different in either body hair or Mes ratings.

Among 21 Caucasian men (aged 22-31, mean 25.7), the IQs of men with body hair ratings of 6 or more were higher ($P < 0.05$) than those of the rest (FIG. 2), but the entire sample failed to show statistically significant correlation between body hair ratings and IQs, demonstrating the complexity. The two men with the lowest body hair ratings were among the highest in IQ (FIG. 2).

A random sample of 165 American Mensa Society members, who are known for their very high IQs, were surveyed with the same three sketches and were asked to rate their own body hair; 117 responded. Their self-rated (a weakness of this study) body hair ratings were higher than those of the aforementioned controls ($P < 0.01$). As in gay men, around 20% of the Mensa men had little body hair. Among 30 Cau-

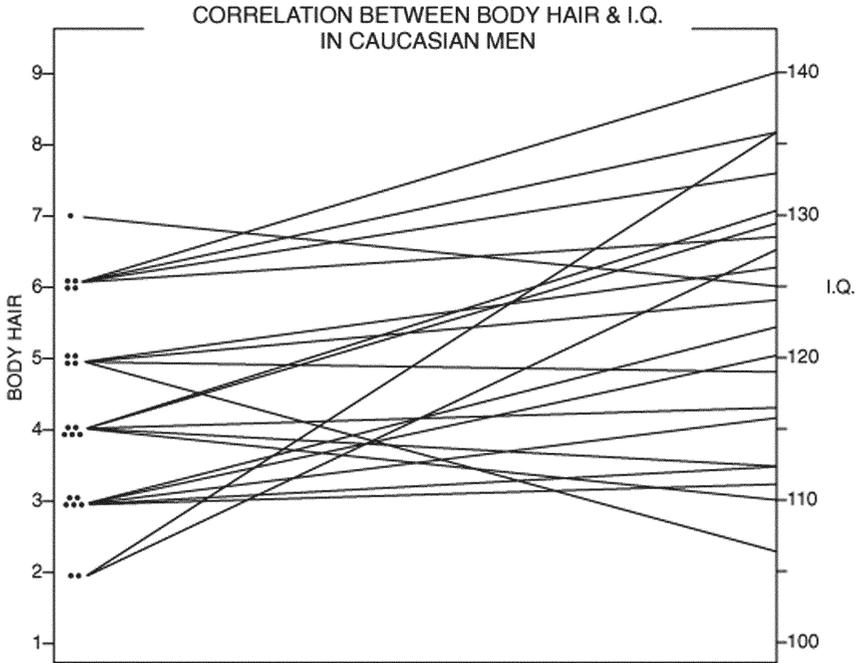


FIGURE 2. Using the same three reference sketches, body hair was rated from 1–9 in 21 Caucasian men aged 22–31, mean 25.7. Their full-scale IQs were determined by a qualified psychologist using WAIS (before WAIS-R was introduced). The IQs of men with body hair ratings of 6 or more were higher than those of the rest ($P < 0.05$), but the entire sample failed to show statistically significant correlation between body hair ratings and IQ.

casian male body builders (aged 22–35, mean 24.9), the 14 with 16 or more years of education were more hirsute ($P < 0.01$) than the 16 with 12 years of education.

Lookingbill *et al.*¹⁶ noted in a group of 53 first-year male Caucasian medical students aged 21–35 that the incidence of Grade 4 body hair, on a scale of 0–4, was 45% compared with at the most 10% in Danforth and Trotter’s¹² sample.

The body hair ratings of 103 male medical students and 31 engineering students from Kerala, India, were higher than those of respectively matched (for age and ethnicity) 101 ($P < 0.001$) and 36 ($P < 0.01$) male manual laborers. Furthermore, the top six engineering students in academic ranking were more hirsute than the bottom eight (mean body hair rating of 5.5 vs. 2.1, $P < 0.01$).

Rahman and Wilson¹⁴ recently proposed “that elevated...T is metabolized by [5 α R] to DHT resulting in the hypermasculization of finger ratios, genitals and morphological features (under DHT control [such as increased body hair growth in the current study, though also with weaker muscles]) in homosexual males” (see Ref. 13). They continue, “The white matter of the brain...is rich in [5 α R] in both animals and humans... Thus,...DHT could [also] be implicated in certain neural differences between homosexual and heterosexual males, especially the larger isthmus [and the larger anterior commissure¹⁷].” Miller¹⁸ writes, “New findings...suggest that in the

crucial task of building synapses, [glia have a critical role].” Frye *et al.*¹⁹ recently showed, “5 α - reduced androgen DHT has cognitive-enhancing effects, ... which are attenuated by [inhibiting further DHT metabolism].”¹⁹

Jacobs *et al.*²⁰ found that “dendritic measures [substantially and consistently] increased as educational level increased,” and 5 α -reduced androgens could help in this. It has been theorized that intellectually gifted people have better developed associational connections that are dependent more on glial cells than on neurons, but this also results from “mental exercise,” or the level of activity at related neurons (see Refs. 20 and 21), again 5 α -reduced androgens could help in this. Diamond²¹ (p. 49) and associates studied Einstein’s brain and found that the number of glial cells per neuron was substantially higher, in all areas they studied, than that in comparably aged male brains. (Incidentally, unlike Darwin, Einstein was glabrous; this could happen if his skin [only] were low in 5 α R and/or androgen receptor.) Furthermore, in a sample of medical students answering an anonymous questionnaire, “63% of the male and 69% of the female students...reported that around the age of puberty they were aware of some degree of sexual attraction to members of the same sex [:] 45% of the male and 48% of the female students were currently aware of such feelings.”²² This is substantially higher than that in any other study published so far using cross-sections of the general population.

In Chinese men, blood DHT and subsequent metabolites and body hair growth are less than those in Caucasian men,¹⁶ but at least in performance IQ, East Asians are known to score higher than Caucasians. This again is possible if East Asian brains, as compared with Caucasian brains, contain a liberal distribution of 5 α R and/or androgen receptor while their skin, being a bigger organ than the brain, lacks them. Although it may seem far-fetched, are East Asian brains, as Einstein’s brain, preferentially endowed with 5 α R and/or androgen receptor “at the expense of” their skin, as a form of biological conservation? Such a phenomenon can diminish statistical probability and escape scientific detection despite enormous interests in such findings.

I have also noted that lesbians are strikingly more muscular, but their incidence of hirsutism is comparable to that of the general female population. Perkins^{23,24} has convincingly demonstrated, as did Hirschfeld¹⁰ and Henry,¹¹ that homosexual women were more mesomorphic than heterosexual women; there was only a marginal increase in hirsutism in Perkins’ large sample of homosexual women (personal communication, 1990–1991). While the incidence of hirsutism may be slightly higher than that in the general female population, the absence or deficiency of “androgen-dependent” facial and forearm hair may be more pronounced in homosexual women. (This observation, which is more clearcut than the contrasting finding in gay men, was what led to the study on the phenotypes of homosexuals.) Intriguingly, Hirschfeld¹⁰ noted that women with an enlarged clitoris were almost always heterosexual, although some steroid 21-hydroxylase deficiency female subjects could be exceptions (see Ref. 25).

In a sample of 44 Caucasian women self-identified as homosexual, 29 (65%) had virtually no facial or forearm hair, while in a matched sample of 36 presumably heterosexual women, only seven (20%) lacked such hair growth. Two (4.5%) in the homosexual sample but only one (2.8%) in the control sample were conspicuously hirsute. In the same samples, “well-above-average” mesomorphism was noted in 30% of the homosexual group but in only 5% of the control group. (All 80 subjects’

similarly posed Polaroid photographs were inspected by the same judge for both muscularity and facial and forearm hair, using a magnifying glass.) Conversely, the incidence of homosexuality in hirsute women appears to be “about the same as in the general female population,” according to Geoffery Redmond who identified (only) five homosexuals in some 350 hirsute women from the Cleveland area (personal communication, 1985 and 1986). Benjamin *et al.*²⁶ studied a sample of 100 hirsute women, of whom “none volunteered any homosexual experience” during a detailed history taking (personal communication, 1986). However, determining the incidence of homosexuality in hirsute women was not an objective of either of the investigators.

Curiously, there are studies showing that lesbians have more gay male relatives than heterosexual women do.^{23,27} I have also noted, empirically, that many “strikingly” muscular women, regardless of their sexual orientation, have brothers who are less than average in mesomorphism (an evolutionary process of minimizing gender differences?), somewhat like the differences in the muscularity of female and male tennis stars, while probably in the majority, mesomorphism is comparable in brothers and sisters, and parents and children (see Ref. 28). All of this may support the Kinsey grading of sexual orientation, from exclusive heterosexuality to exclusive homosexuality with varying degrees of bisexuality in between. (Plausibly, the proportion of exclusive heterosexuality may be greater in the tropical populations. While the largest proportion of sexual transmission of HIV in most Caucasian populations is still through homosexual contact, in the tropics the sexual transmission of HIV is mostly through heterosexual contacts. Furthermore, in Zimbabwe, “The vast majority of ‘unnatural [homosexual] offences’ that have gone on appeal...and are thus recorded in the law reports involve the participation of a white man.... [As whites are] less than 1% of the total population [according to 2003 *E. Britannica Almanac*, 3.5% of Zimbabweans in 2000 were ethnically British, however] and that the same records for other sexual offenses show no such racial concentration is remarkable.”²⁹

CONCLUSIONS

These findings are consistent with Doerr *et al.*'s report⁴ of elevated DHT-to-T ratios in the blood of homosexual men. This is in sharp contrast to those in 46,XY 5 α R 2 deficiency as well as with Rahman and Wilson's hypothesis.¹⁴ A similarly elevated DHT-to-T ratio might be seen in intellectuals also, as Frye *et al.*'s study¹⁹ suggests. Furthermore, these findings offer an indirect support to an obscure “androgen dysgenesis” hypothesis on schizophrenia.³⁰⁻³²

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