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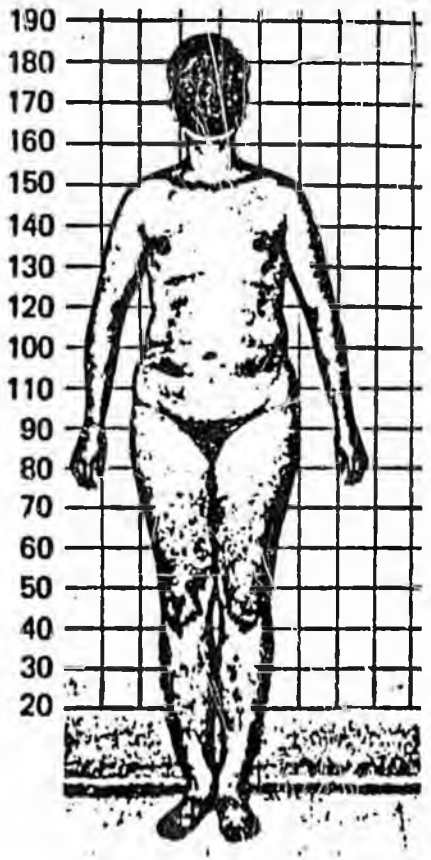
Table 5-1. Abnormal Physical and Laboratory Findings on Mr. A.

Physical Findings:

1. Scars on chest from previously performed bilateral mastectomies, done because of gynecomastia (enlarged breasts) which developed at puberty
2. Hypogonadism (small testicles)
3. Abnormally long arms and fingers

Laboratory Findings:

1. Low sperm count
2. Elevated luteinizing hormone (148 ng/ml); normal LH in adult males = 36–64 ng/ml
3. Elevated follicle stimulating hormone (638 ng/ml); normal FSH in adult males = 98–276 ng/ml
4. Low testosterone (153 ng/100 ml); normal (s.d. = 2) range in adult males = 275–875 ng/ml
5. 47 XXY chromosome pattern; normal male pattern = 46 XY



Typical patient with Klinefelter's syndrome. Note the gynecomastia and female distribution of adipose tissue. (Photo courtesy of Dr. John Money.)

Pedophilia as an Example of a Diagnosable Sexual Deviation Syndrome

The case just presented is an example of homosexual ephebophilia, which means that the patient is a man whose sexual orientation, interests, and preferences are directed predominantly towards postpubertal boys. Were he interested mostly in prepubertal boys, a diagnosis of pedophilia, rather than ephebophilia, would be more accurate. For purposes of the present discussion, the term pedophilia will be used when referring to persons sexually oriented towards children, regardless of whether the children are pre- or postpubertal.

According to the 3rd edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM III), there are three criteria which must be satisfied in order to make such a diagnosis.[1] First, it is necessary to establish that the patient becomes erotically excited by the act or fantasy of engaging in sexual activities with children. Secondly, if the patient is an adult, rather than an adolescent, the children must be at least ten years his junior. Finally, it must be clear that any sexual acts engaged in with children are not either due to other mental disorders such as schizophrenia, dementia, or drug intoxication, or due to lack of an suitable age-appropriate partner, which occurs in some cases of incarceration or incest.

As is true of persons with conventional heterosexual interests, the onset of sexual behavior in persons with unconventional, or "deviant," erotic desires usually begins around the time of puberty. Related fantasies, however, may have been experienced much earlier. In the absence of appropriate treatment, the course of such syndromes tends to be chronic, which is not surprising because the sex drive is maintained over time.

In terms of reported cases, pedophilia appears to be almost exclusively a male problem, although its exact prevalence is unknown. The majority of cases in the literature have involved heterosexual pedophilia (men attracted towards little girls), but more recently some centers have reported a higher frequency of homosexual involvements.[2] In ancient Greece, homosexual pedophilic behavior was considered acceptable. Socrates, for example, wrote, "A valued company might be composed of boys and their lovers . . . for of all men they would be ashamed to desert one another."[3] Judeo-Christian beliefs, however, based in part upon the biblical story of Sodom and Gomorrah (hence, the term sodomy), clearly consider it to be immoral.[4–6] In some states, a possible legal sentence for engaging in sex with a minor is the death penalty.[7] Although in American society a child can clearly become quite distressed by involvement with a pedophile (hence the importance of applying effective interventions to stop such behavior), it is also the case that some children become even more upset by the reactions of well-intentioned adults who find out about their sexual involvements.[8] Tragically, sometimes children also feel guilty and responsible for any punishment imposed upon a former partner, a person (perhaps even a relative) whom they may actually like a great deal.

Sexual activity by pedophiles with children rarely involves physical assaultiveness and is usually the result of persuasion rather than coercion, although the series of brutal slayings in Atlanta, Georgia, during 1980 and 1981 represented an exception.[9] A study in Detroit, Michigan, of over 1752 sex offenses against children found that physical injury occurred in less than 9% of the cases.[10] When a pedophile craves sadistic sexual involvement with children, a second diagnosis of erotic sadism should also be made. Though most children are warned to be leery of strangers, the victims of pedophiles, unlike the victims of exhibitionists, usually know their partners well, and sexual activity (which is often mutual fondling and masturbation rather than intercourse) frequently occurs in the home of either the victim or the perpetrator.[1,8] Whereas some pedophiles merely lust after children, some seem to fall in love with them, which may make treatment more difficult.

Why persons differ from one another in sexual orientation and in the nature and intensity of their erotic desires is unknown. It is unclear why most men find women sexually appealing whereas some are erotically attracted towards young boys. Nor is it clear why still others experience recurring urges to expose themselves publicly or to rape repeatedly. In some instances, certain types of early childhood experiences seem to play a contributory factor in determining adult sexual interests. Many pedophiles, for example, were themselves sexually involved with adults as youngsters.[11] In other cases, biological pathologies such as structural brain damage, hormonal dysfunctions, genetic anomalies, or electrical disturbances of the brain seem to play a role.[2,12] Persons who meet the diagnostic criteria for a sexual deviation syndrome, of which pedophilia is an example, may be appropriate candidates for treatment with antiandrogenic medications.

Diagnosing a Sexual Deviation Syndrome

The term used in DSM III to categorize sexual deviation syndromes is paraphilia, which means attraction to deviance.[1] Diagnosis of a sexual deviation syndrome can be made by inquiring about a person's thoughts, feelings, and behaviors. Individuals with deviant sexual interests ordinarily experience repeated erotic fantasies about engaging in unconventional forms of sexual activity. Asking an individual about his masturbatory fantasies can be revealing in this respect because erotic arousal for the purpose of masturbation may be difficult in the absence of erotic mental imagery.[13,14] The homosexual pedophile frequently fantasizes about young boys, whereas the heterosexual exhibitionist has recurring thoughts about exposing himself to women. The male transvestite is preoccupied with the idea of cross-dressing in female clothing. Rather than depending solely upon introspective reports, Dr. Gene Abel of the New York State Psychiatric Institute suggests that the rate of change in the diameter of the pupil of the eye can also be used as a means of determining whether a particular stimulus, such as the picture of a nude child, is sexually arousing (see Figure 5-1). Measures of penile tumescence and other forms of polygraphic data have also been used to try to document unconventional sexual interests.[13]

Accompanying the unconventional sexual fantasies experienced by persons who can be diagnosed as having a sexual deviation syndrome are intense erotic cravings. These cravings are experienced as frustrating and discomforting when deviant fantasies cannot be enacted. Karl Jaspers, the eminent German phenomenologist (who was probably influenced in his thinking by Krafft-Ebing and Havelock Ellis), characterized deviant sexual cravings as intolerable states, similar to addictions, that demand action in order to be alleviated.[16] However, many persons with conventional heterosexual interests can also feel discomforted if sexually frustrated; such frustration may motivate a person to seek out a consensual sexual partner. The individual with a pedophilic sexual orientation, however,

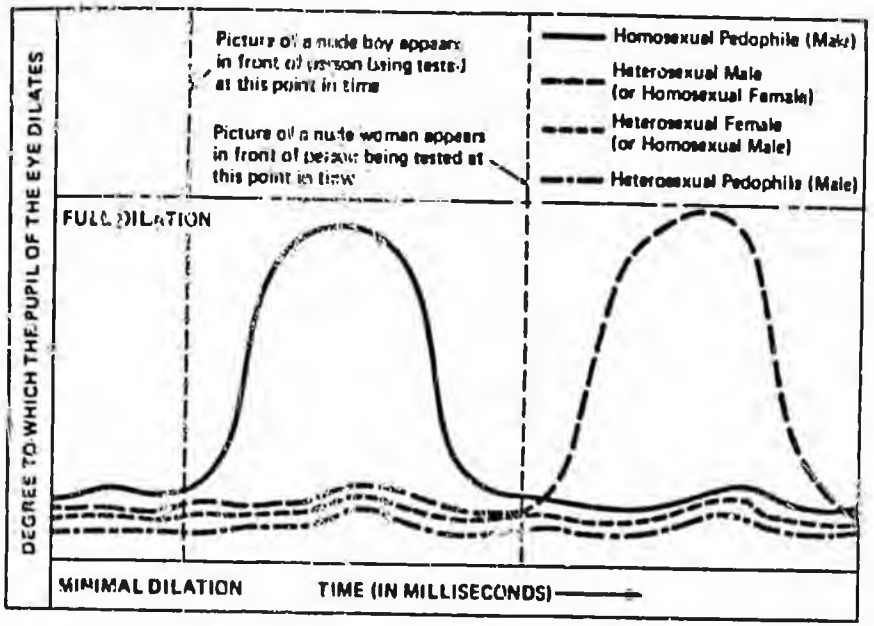


Figure 5-1 Schematic representation of the pupillary responses of four persons with different sexual orientations.

faces much greater difficulties in the sense that all those whom he may find naturally appealing (i.e., children) are forbidden as partners. Living in a world where all those who are sexually appealing are forbidden as partners must be difficult—a situation heterosexual adults can, perhaps, empathize with by imagining living in a world where one was expected to have sex only with children.

People do not decide voluntarily what will arouse them sexually. Rather, they discover within themselves what sorts of persons and activities are sexually appealing to them. Sexual behavior in general tends to be in part a response to one's erotic desires and fantasies. Thus a man with conventional heterosexual interests tends to seek out adult women, just as the homosexual pedophile (who may be impotent with women) seeks out boys. The heterosexual voyeur repeatedly seeks out situations where he can "peep" upon unsuspecting naked or partially clad females in response to his sexual cravings, whereas the male transvestite repeatedly cross-dresses.

DSM III lists nine major diagnostic subcategories of paraphilia (see Table 5-2).[1] In earlier, outdated classification schemes, sexual deviation syndromes were often considered to be a subdivision of the so-called sociopathic personality type. It is important to appreciate that sexual orientation can be assessed independently of character traits. Some men with unconventional sexual orientations show no other evidence of "sociopathic personality traits," such as disrespect for authority, other

kinds of criminal behaviors, truancy, vocational irresponsibility, or lack of concern for others. On the contrary, men with unconventional sexual orientations such as pedophilia can manifest a range of character traits, just as is true of persons with conventional heterosexual orientations."[17] Thus, terms such as pedophilia refer to the nature of a person's sexual orientation or to the nature of his sexual desires, and not to his traits of character. A paraphiliac man who has been consistently nonviolent in temperament would not ordinarily be expected to undergo a sudden change in personality so as to become a physical danger to others.

Table 5-2. Major Diagnostic Subcategories of Paraphilia.

1. Pedophilia
2. Exhibitionism
3. Transvestism
4. Voyeurism
5. Zoophilia
6. Fetishism
7. Erotic sadism
8. Erotic masochism
9. Other (includes paraphiliac or compulsive rape)

Differential Diagnosis as a Basis for Determining Appropriate Psychiatric Treatment

Many persons are referred for psychiatric assessment and possible treatment by virtue of the fact that they have behaved in a particular way (e.g., by having sexual involvement with a child) and, thus, they carry the label "sex offender." Not all sex offenses (a legal term), however, are the reflection of a sexual deviation disorder or paraphilia (a medical term). In assessing a sex offender for possible treatment, the psychiatrist or evaluator must try to ascertain (1) the state of mind the individual was experiencing that led him to act in a particular way, and (2) whether the behavior in question was the manifestation of a diagnosable and potentially treatable psychiatric syndrome.

A sex offense could represent the expression of any of a number of psychiatric conditions. Schizophrenia, for example, is a syndrome comprised of (1) delusions, which are rigidly held, idiosyncratic, false beliefs that cannot be corrected by reason (e.g., the belief that one has a bomb inside one's head); (2) auditory hallucinations ("hearing" voices when no one is speaking); (3) disorganized thinking (in both logic and syntax); (4) insomnia; (5) agitation; (6) emotional apathy; (7) loss of initiative; and (8) bizarre behavior.[18] The term schizophrenia refers to the cluster of associated features comprising the syndrome and not to the person manifesting the condition.[19] Schizophrenia must be differentiated from other psychiatric syndromes such as dementia, delirium, and affective illness because delusions, hallucinations, and bizarre behavior may occur in these disorders as well. In dementia and delirium, however, delusions and hallucinations when present are accompanied by disorientation and intellectual decline, whereas in affective illness these symptoms occur within the setting of a sustained mood change. The age of initial onset of schizophrenia is almost always in the late teens or early twenties, and like a variety of other medical conditions (such as juvenile onset diabetes), its course is chronic. There is evidence that this form of mental illness, in which persons lose the capacity to perceive accurately whether heard voices are real or imaginary, may be associated with a genetic predisposition.[18] Thus, schizophrenia seems to occur most frequently within certain families. An associated biological pathology may be the presence of heightened levels of various chemical neurotransmitter substances (such as dopamine) in the brain.[20]

Mr. B. was a patient who developed the delusion that he needed to drink the blood of women in order to remain alive. Initially, in response both to this rigid false belief and to "voices telling him to do so," he sacrificed several animals and drank their blood. Subsequently, he physically assaulted several women in an effort to obtain blood from them, which resulted in his being charged with a second degree sex offense. In this case, the offense in question was clearly a behavioral manifestation of his schizophrenic condition, and his sexual orientation and erotic desires were apparently quite conventional. Appropriate treatment for the symptoms of schizophrenia includes the use of phenothiazine medications or other sorts of neuroleptic drugs.[21] However, just as is the case when insulin is employed to treat diabetes, present-day pharmacological therapy does not represent a complete cure for this illness.

Sex offenses can also be a reflection of other psychiatric conditions such as manic-depressive illness.[22] In addition to delusions of grandeur (e.g., the belief that one is Christ) and elated mood, one of the other symptoms of the manic syndrome is often an increase in sexual appetite. Mr. C. is a 54-year-old man who would repeatedly expose himself to middle-aged women only when in the midst of such an episode. At other times, when his mood was stable and his capacity to perceive reality intact, he would never act in such a fashion. The appropriate treatment in his case, as a prophylaxis against future recurrences of this psychiatric illness (whose natural course, like asthma, is episodic rather than chronic), is lithium carbonate. When well, this patient experienced perfectly conventional erotic interests and, thus, would not satisfy the diagnostic criteria of a sexual deviation syndrome.

Sex offenses can be perpetrated by persons with conventional sexual desires and orientations while intoxicated with drugs or alcohol. Here psychological counseling (plus, perhaps, Antabuse—a medication that makes a person feel physically ill if he consumes alcohol while taking it) would likely be the treatment of choice. A mentally retarded person with conventional erotic interests who "didn't know any

better" might also commit a sex offense and possibly require counseling plus sex education. Mr. D. is an intelligent man with conventional sexual interests who began an incestuous relationship with his sister before either of them was old enough to appreciate the implications of such behavior. Here, counseling to help them deal with their guilt and family concern was the treatment employed. Finally, a self-centered, self-indulgent person with conventional sexual desires, but with no concern for the well-being of others, might also commit a sex offense. An example would be the criminal who rapes a woman in the midst of a robbery because he feels he can get away with it. Such a person might well have no diagnosable psychiatric illness, and a proper disposition might include quarantine in the form of incarceration.

Rationale for Treatment When a Sex Offense Is the Manifestation of a Sexual Deviation Syndrome

Based upon the preceding discussion it should be clear that some sex offenses are committed by men who are not simply self-indulgent individuals with conventional erotic interests misbehaving. Unlike the homosexual pedophile, most men (including homosexual men) experience absolutely no desire to engage repeatedly in sexual involvements with young boys.[23] Rather, the average man would be repulsed by such an idea. Whereas the exhibitionist lusts for the opportunity to repeatedly expose himself publicly, most men would be embarrassed or humiliated at the prospect of behaving in such a fashion. Though many men might indeed turn their gaze towards a partially clad woman visible through a nearby window, few experience recurrent urges to "peep" repeatedly at the risk of job, reputation, family, and incarceration as does the voyeur.[24,25] The average man would feel foolish dressed in woman's clothing, whereas the male transvestite finds this erotically arousing. Although many men find themselves capable of being sexually stimulated by descriptions or scenes of coercive sexual acts, the average man certainly does not experience repeated ruminations and cravings to rape. Nor, as is the case with the paraphiliac (or compulsive) rapist, does he repeatedly have to resist the temptation to rape in order to remain out of trouble.[2] Thus, the assumption that paraphiliac behavior is little more than misbehavior is a conceptually invalid oversimplification. This kind of oversimplification leads to interventions that are rehabilitatively ineffectual. The recidivism rate is extremely high when punishment is the "treatment" of choice, as punishment does virtually nothing to make it any easier for a man to resist deviant sexual cravings. One hears of numerous instances in which a paraphiliac rapist, recently freed from prison on work release, has already raped again repeatedly. Quarantine, as opposed to punishment, may indeed be necessary so long as an individual poses a threat to others (as is sometimes true of some persons with contagious diseases), but if effective treatment that assures public safety can be applied, the need for isolation from the community may be obviated.

PART II: BIOLOGICAL PATHOLOGIES AND ETIOLOGIES

Klinefelter's Syndrome as an Example of a Biological Condition Possibly Predisposing towards Sexual Deviation

Mr. A., whose case was discussed earlier, was found to have Klinefelter's syndrome. Dr. Harry Klinefelter and his colleagues described this condition for the first time in 1942 in the *Journal of Clinical Endocrinology*.[26] Klinefelter's syndrome is a condition characterized by (1) the development of gynecomastia (enlarged breasts) at the time of puberty, (2) aspermatogenesis (low sperm production), and (3) an increased excretion of follicle stimulating hormone (FSH) by the pituitary gland in the brain.

Normally a person without Klinefelter's syndrome has 23 pairs, or a total of 46, chromosomes—each of which contains millions of genes. One-half of each chromosome pair is obtained from the mother, and the other half from the father, at the moment of conception. Twenty-two of the 23 chromosome pairs are termed autosomes, and as far as is known they are not directly related to the determination of the body's gender appearance.

In most cases, every cell in a person's body contains a replica of all 46 chromosomes. Any cell can be obtained from an individual, prepared in a special way, and then looked at under a microscope, to actually visualize them. When this is done, ordinarily by looking at a white blood cell, the chromosomes can be lined up and numbered as shown in Figure 5-2. Usually these chromosomes look the same in every cell. When this is not so, as when some cells contain 46 chromosomes but others 45, this is known as a mosaic pattern. The top part of each chromosome pair is called the p-section, and the lower part the q-section. If a chromosome abnor-

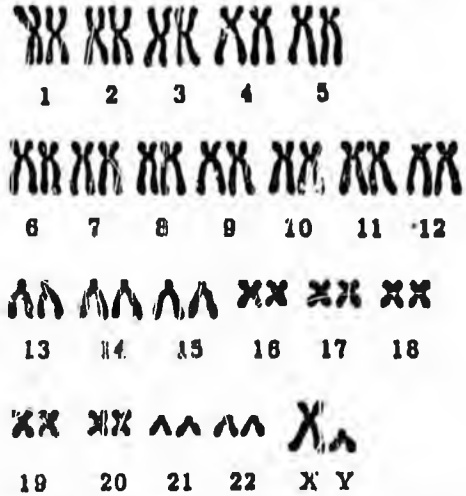


Figure 5-2. Normal male (46 XY) chromosome pattern.

mality were to consist of extra genetic material being present on the top part of chromosome pair number 9, this would be indicated by the notation 9 (p+).

If one of the 23 pairs of chromosomes looks like a small X matched with another small X, a person will look like a female at birth (barring certain medical complications).[27] On the other hand, if that chromosome pair looks like a small X matched with a small Y, the person will usually look like a male because the presence of a Y-shaped chromosome ordinarily instructs the body to take on a male appearance. On rare occasions, a woman may be found to have an XY rather than an XX chromosome pattern, if chemical receptors in the cells in her body lack the capacity to respond to genetic messages sent out via hormones from the Y chromosome.[28]

In Klinefelter's syndrome, instead of having 23 pairs of chromosomes for a total of 46, 47 chromosomes are present, one of which is an extra X. Thus, although due to the presence of a Y chromosome, the Klinefelter's child ordinarily appears to be a boy at birth; genetically speaking, the child can be thought of either as a male (XY) with an extra X chromosome or as a female (XX) with an extra Y chromosome. Although most Klinefelter's patients have only one extra X chromosome and are therefore said to have a 47 XXY karyotype pattern, some have even greater numbers of additional X chromosomes present.

Besides the XX or XY pattern, other physical indices have been used to try to ascertain biological gender. Although most women have two X chromosomes in every cell, one of these two is ordinarily partially inactivated.[29,30] As a result, if a cell is taken from a woman, by gently scraping the buccal surface of her tongue, and it is then properly prepared and looked at under a microscope, a clump of stained chromatin will be seen within this cell's nucleus. Lyon was the first to suggest that this "chromatin positive material," also known as a Barr body, is actually a partially inactivated and clumped up extra X chromosome.[31] Since the "normal" (XY) male has only one rather than two X chromosomes, he has no extra one present to clump, and thus he will test chromatin negative. The Klinefelter's male, however, because he does have two X chromosomes will stain chromatin positive and thus, on the basis of this test, appear to be a female.

Another test sometimes used to identify biological gender involves looking at neutrophils, a type of white blood cell, under a microscope. Ordinarily the nucleus inside a neutrophil obtained from a woman contains a drumstick-like appendage (see Figure 5-3).[31] This "drumstick" is not seen in neutrophils obtained from "normal" (46XY) males, but it is seen in Klinefelter's patients.

As early as 1957, Money and Hampson suggested that sex differences can be looked at in a variety of ways besides physical appearance (see Table 5-3).[32] When this is done using Klinefelter's patients as an example, it becomes clear that questions as to whether an individual is a man or a woman, and questions about what sexual orientation and gender identity should be, become much more difficult to answer than is ordinarily appreciated. Because Klinefelter's patients are born looking like males, their parents naturally enough routinely assign them a male sex role, and they are raised as boys. However, in terms of gender identity, some of

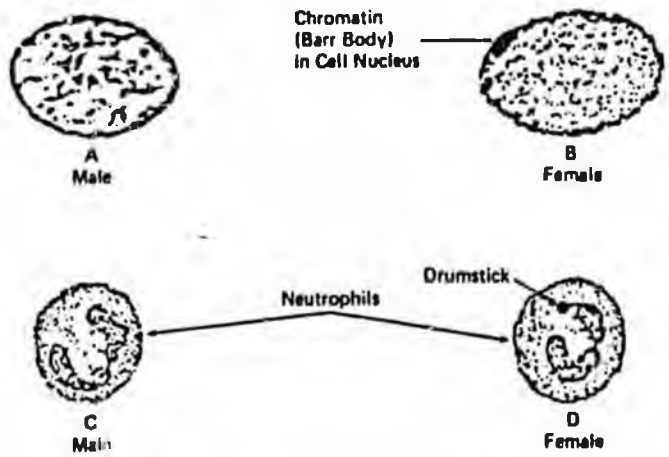
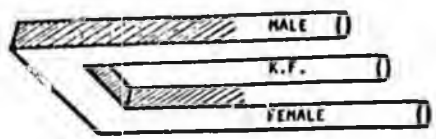


Figure 5-3. (A) Cell nucleus from buccal smear of "normal" male. (B) Cell nucleus from buccal smear of "normal" female. (C) Neutrophil from "normal" male. (D) Neutrophil from "normal" female.

Table 5-3. Male versus Female Sexual Characteristics in Klinefelter's Patients.

	IN KLINEFELTER'S SYNDROME (K.F.)
1. Sex of assignment and rearing	*Male*
2. Feelings of gender identity	May be *male* or *female*
3. (a) Sexual orientation (b) Sexual behavior	May be towards members of the same or opposite sex (which sex is the opposite sex in K. F. syndrome?)
4. External anatomical sex (phenotype)	*Male* at birth; then becomes both *male* and *female* (e.g., enlarged breasts) at puberty
5. Hormonal sex	Hormonal profile (of testosterone, FSH, and LH) is similar to postmenopausal *females*
6. Gonadal (and internal anatomical) sex	Male, but *hypogonadal*
7. Chromosomal sex (genotype)	*Male/female* — karyotype (XXY) *Female* — Barr body *Female* — neutrophilic drumstick



them, as early as age 7, have felt themselves psychologically to be girls.[33] Dr. John Money described the case of an otherwise normal 8-year-old boy brought for psychiatric assessment by his frustrated parents because he insisted he felt more comfortable dressed in girls' clothing. Chromosomal analysis revealed that he had Klinefelter's syndrome. As demonstrated by the case of Mr. A. discussed earlier, a number of Klinefelter's patients are sexually attracted to little boys rather than to members of the opposite sex, but in some ways it is unclear which sex is the opposite sex when it comes to Klinefelter's syndrome. Why some Klinefelter's patients find children rather than adults appealing is unclear. It is clear, however, that the sight of an infant usually elicits some feeling (albeit asexual) in most people. The possibility that feelings towards children (including the so-called maternal instinct) may be at least partially influenced by genetic factors cannot be excluded.[34] Although body phenotype is masculine during childhood, 80% of Klinefelter's patients grow large breasts and develop a "female distribution of adipose tissue" at the time of puberty (see Table 5-1).[35,36] The "hormonal sex" of these patients as measured by levels of FSH, LH, and testosterone is somewhat similar to that of a postmenopausal woman. Although Klinefelter's patients have testes rather than ovaries, their testes are very small, and produce little testosterone and virtually no sperm. As noted earlier, in terms of (1) chromosomal karyotyping, (2) Barr body testing, and (3) assessment of neutrophils for the presence of "drumsticks," Klinefelter's males produce the same test results as females. Thus, perhaps it should come as no surprise when one discovers that a patient like Mr. A. who has Klinefelter's syndrome also has problems in terms of sexual orientation and in terms of the nature of his erotic desires.

Although Klinefelter's patients have been well studied medically, little epidemiological data surveying the prevalence of sex-related disturbances in the Klinefelter's population as a whole are available.[37] In many studies, pertinent questions regarding sexual phenomenology and experience were never asked.[38] Furthermore, the prevalence of sexual deviation, gender dysphoria, and related phenomena amongst the general public has not been well documented and therefore is unavailable for comparison purposes. For these reasons, in spite of the case of Mr. A. presented earlier, conclusions regarding the relationship between Klinefelter's syndrome and sexual deviation must be evaluated cautiously. Nevertheless, review of the literature (despite some disagreements[35,39,40]) suggests that the prevalence of sexual deviation syndromes in Klinefelter's patients may indeed be higher than it is amongst non-Klinefelter's men.[41–50] Baker and Stoller, for example, reviewed over 100 pertinent articles and arrived at such a conclusion.[33] Since most Klinefelter's patients appear to be essentially normal boys until puberty, it is difficult to account for this apparently high prevalence of sexual deviation on the basis of child rearing practices or other types of early life experiences.

Not all patients with Klinefelter's syndrome show evidence of sexual deviation; rather some are hyposexual instead. In such cases, testosterone has sometimes been administered to increase rather than decrease sexual capacity. When this has been done, these patients have reported a heightening of erotic desire, which again demonstrates the apparent relationship between testosterone levels and sexual phenomenology.[51–53]

Although most Klinefelter's patients have low testosterone levels, often the levels are not so low as to obliterate sexual desire significantly. Therefore, when sexual desires are deviant, as is the case with pedophilia, attempts to further reduce sexual appetite may still be warranted. This highlights the fact that the rationale for utilizing testosterone-depleting methods to treat paraphiliacs is based upon appreciation of the nature and intensity of the individual's erotic cravings, and not upon documentation of a biological abnormality. However, just as lung cancer is more likely to occur if a person smokes than if he does not, the likelihood of sexually deviant urges may be greater in the presence of certain kinds of biological abnormalities than in their absence.

Etiology of Conventional and Unconventional Sexual Desires—Associated Biological Pathologies

Mr. A., whose case of homosexual pedophilia was discussed earlier, was also diagnosed as having Klinefelter's syndrome. This, coupled with the fact that medications may sometimes be used in treatment, raises the question of whether one should routinely look for possible biological contributors to sexual behavior. In animal species other than man, biological factors clearly contribute significantly to such behavior. Female dogs, for example, become sexually responsive to male dogs only while in heat (estrus). At such times, in response to the odor of chemical substances emitted from the females, the males themselves become sexually much more assertive. In many species of birds, only the male sings. If a female zebra finch is given estradiol as an embryo, plus androgen hormones as an adult, she will sing a male courtship song without having heard it previously.[54] In addition, she will display typically male mating behavior and, like normal males (but unlike normal females), will have an increased number of cells in the nucleus robustus archistratialis and other brain regions (see Figure 5-4a).

In most species of rat, normally only males mount. "Mounting" is a behavior that involves placing the forepaws on the back of another animal while posturing the body in a fashion conducive to intercourse. Adult female rats given testosterone at a specific time in utero will also show this behavior which normally predominates in males.[55] Male rats do not normally build nests or care for their young, but they will build nests and show other kinds of "maternal behavior" if electrical stimulation is applied to certain brain areas.[56] Male Siamese fighting fish are preprogrammed genetically to respond aggressively to the sight of another male. Tinbergen described in great detail how specific configurations of visual stimuli can elicit (or "release") specific sexual behaviors in stickleback fish.[57] The same is true of spiders and blowflies[58] (see Figure 5-4b). In some cases, animals are pre-

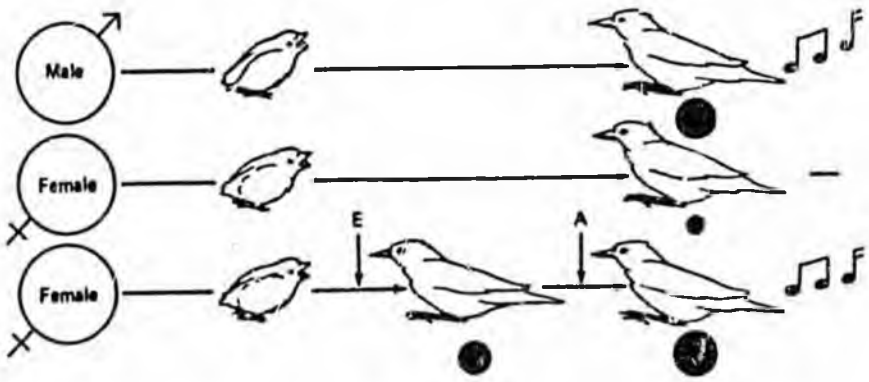


Figure 5-4a. Sex differences in male and female finches. Male birds sing; females do not. However, females treated with estradiol (E) just after hatching, and with androgen (A) in adulthood, do sing and exhibit other male behavior. Shaded disks represent the relative size of one brain region involved in song production. (From reference 54.)

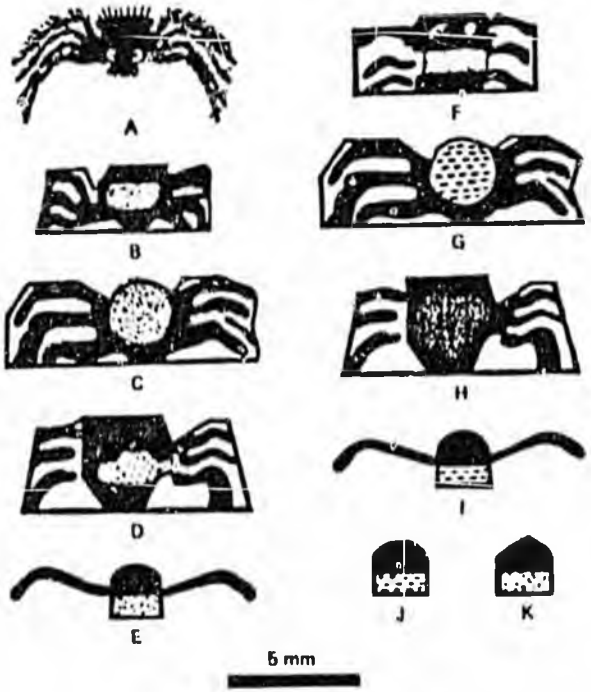


Figure 5-4b. Visual specificity of the sexual responsiveness of spiders. Male spiders with no prior sexual experience may attempt to mate (or attack) moving colored objects shaped like those on the left, but they will not do so with those on the right. (From reference 58.)

programmed genetically to respond sexually to sounds rather than vision. The sound of the wing beat of the female is the stimulus which attracts male crickets and mosquitos.[58] Some animals have an innate predisposition to follow, and become psychologically attached to, the first large object they see moving during a "critical time period" in early life. Attractions acquired in this fashion are said to be "imprinted."[59] Lorenz described young ducks who became so imprinted towards him that they tried to feed him live worms—a drive apparently so strong that they would try to force them into his ears if he closed his mouth.[60] Early life imprinting can influence the nature of an adult animal's sexual attractions.

In 1978, researchers reported a study in the *New England Journal of Medicine* documenting the observation that some women initiate sexual behavior most frequently during the ovulatory period (days 12 through 17) of their menstrual cycles.[61] This is a time in the cycle when the androgenic hormone androstenedione is ordinarily at its peak.[62] When estrogen and progesterone hormones were given to these women in the form of birth control pills, the result was a suppression of the ovulatory peak of female-initiated sexual behavior. Since regular menstrual cycling, including monthly menstruation, continued normally, this decrease in the frequency of female-initiated sexual behavior around the time of ovulation was apparently attributable, either directly or indirectly, to the altered hormonal status of the women in question.

Human males do not have to be taught how to obtain an erection. Instead, at some time in their lives, presumably because they are genetically preprogrammed to do so, they begin to have erections in response to specific kinds of tactile, mental, olfactory, or visual stimuli (such as the sight of a shapely female) Even human infants seem to respond instinctively in specific ways to certain stimuli such as a loud sound (which causes a startled reaction), the visual perception of height (which causes hesitation), or the sight of a familiar face (which causes smiling).[58] Goy and McEwen at a symposium at the Massachusetts Institute of Technology in 1977 suggested that biological factors may contribute more than previously appreciated to human social and sexual experience.[63] Recently, Pillard and co-workers summarized data suggesting that there may be a genetic predisposition towards male homosexuality.[64]

In humans (as well as in animals), structural and functional differences in the brain between males and females seem to depend upon exposure to various "sex hormones" during particular phases of embryonic development.[65–70] Females exposed prenatally to high doses of androgens tend, as adults, to show patterns of psychosexual development more typically seen in males.[71,72] Prenatal exposure to progesterone may have a "feminizing effect."[73,74] Exposing a male human fetus to medications containing estrogen may lead to a pattern of adult psychosexual behavior more frequently seen in women.[75,76] Oral administration of 10 mg per day of testosterone to adult women can increase sexual responsiveness and libido without causing masculinizing bodily changes.[77]

Because it seemed possible that biological factors might contribute significantly to human sexual behavior, a variety of laboratory tests were performed on a group of paraphiliac patients.[2] These data, which have recently been updated, are presented in Table 5-4. Although it will be important to perform similar tests on an appropriately matched group of persons with conventional sexual desires, for comparison purposes, there does appear to be a very high frequency of biological pathologies in these patients. These pathologies include structural brain damage, hormonal abnormalities, electroencephalographic dysfunctions, and chromosomal anomalies (such as Klinefelter's syndrome).

Thus far, the possible role of biology as an etiological contributor to sexuality has been discussed. However, Stoller hypothesized that whereas biological factors may become a compelling determinant of sexual experience and function in the presence of significant organic anomalies (Stoller's "biological force" hypothesis), sometimes environmental influences such as early life experiences may play a more dominant role.[33] In this connection, Dr. John Money has discussed the case of a pair of genetically identical twins, one of whom required a total penectomy (surgical removal of the penis) a few days after birth, due to trauma suffered during circumcision. Subsequent to that penectomy, plus additional reconstructive surgery (and hormone supplementation at puberty), the child in question was reared as a girl. Although perhaps somewhat "tomboyish" in interests and play during childhood, this 46 XY female, now a teenager, feels herself psychologically to be a woman. Her sexual orientation and interests are directed towards age-appropriate males, and someday she hopes to marry and adopt children. Her genetically identical twin feels himself to be masculine, and he finds females appealing. Thus, it is clear that both biological and environmental factors can influence sexual phenomenology and behavior.

PART III: THERAPIES

Psychotherapy and Behavior Therapy as Treatments—Biological and Syndromal Considerations

Four major types of treatment have been proposed to try to help sex offenders. They are psychotherapy, behavior therapy, medication, and surgery. Unfortunately, recognition that optimal treatment may depend upon proper differential diagnosis has often been unappreciated. Sometimes the goals of therapy are stated explicitly, for example, to help a person gain greater capacity for self-control, but this is not always the case.

Most psychodynamic theories make the assumption that conventional heterosexuality alone is natural, and that other orientations and preferences are pathological variants which only occur when proper development goes awry. These theories see sexual deviation as a reflection of "unconscious" psychological conflicts and postulate that such conflicts come about as a result of unsatisfactory early life experi-

Table 5-4. Associated Findings in a Group of Male Patients with Sexual Disorders.

PATIENT DIAGNOSIS	ASSOCIATED FINDINGS
1. Erotic sadism	Oculomotor abnormality suggestive of basal ganglion dysfunction. Unexplained gait disturbance.
2. Homosexual pedophilia	Dyslexia; childhood lisp requiring speech therapy.
3. Homosexual pedophilia	Cortical atrophy; grand mal seizures; recurrent slow delta waves and sharp activity over frontal brain regions on EEG.
4. Hypersexuality	Elevated testosterone; family history of adrenogenital syndrome.
5. Homosexual pedophilia	Klinefelter's syndrome, mosaic (90% 47 XXY, 10% 46 XY). Elevated FSH and LH. Low testosterone.
6. Homosexual pedophilia	Strabismus; childhood learning disorder.
7. Heterosexual pedophilia	Schizophrenia.
8. Exhibitionism	Elevated testosterone; prior history of coma several months following head trauma; grand mal seizures.
9. Heterosexual pedophilia	Cortical atrophy (2° to trauma); right-sided partial hemiparesis; visual spatial deficits.
10. Homosexual pedophilia	Elevated testosterone.
11. Heterosexual pedophilia	Near total blindness due to brain damage.
12. Heterosexual pedophilia	Elevated testosterone; mild ventriculomegaly and cortical atrophy most pronounced in area of right sylvian fissure (by CAT scan); elevated 24-hour urine pregnanetriol (3.1 mg — normal is less than 2.5 mg).
13. Homosexual pedophilia	Elevated LH. Generalized muscular hypotonia.
14. Paraphiliac rape	Elevated testosterone; grand mal seizures.
15. Homosexual pedophilia	Elevated testosterone.
16. Hypersexuality	Cortical atrophy; cortical blindness; mild mental retardation.
17. Voyeurism	Elevated LH.
18. Homosexual pedophilia	Dyslexia.
19. Homosexual pedophilia	Mosaic chromosomal pattern (97.5% XY, 2.5% XX); large heterochromatic region at centromere of autosome number 19 (polymorphic variant); low LH.
20. Homosexual pedophilia	46 XY, inversion 9(p+ q−) chromosome pattern. High LH.
21. Homosexual pedophilia	47 XYY chromosome pattern. Elevated testosterone, FSH, and LH.
22. Paraphiliac rape	Elevated FSH.
23. Exhibitionism	Elevated LH.
24. Homosexual pedophilia	Low LH.
25. Heterosexual pedophilia	Elevated testosterone, FSH, and LH.
26. Homosexual pedophilia	Klinefelter's syndrome; elevated FSH and LH. Low testosterone.
27. Heterosexual pedophilia	Elevated testosterone.
28. Homosexual pedophilia	Elevated testosterone.
29. Voyeurism	Elevated testosterone and LH.
30. Hypersexuality	Elevated testosterone; structural brain damage.
31. Homosexual pedophilia	Elevated testosterone, FSH, and LH. EEG abnormality.
32. Transsexualism	Klinefelter's syndrome. Low testosterone.
33. Homosexual pedophilia	Elevated testosterone.
34. Homosexual pedophilia	Klinefelter's syndrome. Elevated FSH and LH. Low testosterone.

NOTE: Normal (s.d. = 2) testosterone range in men = 275–875 ng/100 ml. Normal FSH in males = 98–276 ng/ml. Normal LH in males = 36–64 ng/ml. No associated abnormalities were detected in seven other patients with sexual disorders who were also assessed.

ences. However, in the author's opinion, they rarely explain adequately why such experiences should be expected to result in specific problems such as exhibitionism, rather than pedophilia or juvenile delinquency. Usually the intent of therapy is to try to "uncover" conflicts so that an individual can rework his developmental problems. In point of fact, there is reason to doubt whether sex offenders come to fully understand or change their sexuality by such means.

In an investigation published in *Lancet* in 1979, Eicher studied a group of transsexuals (persons who feel themselves to be psychologically "trapped in the body of the wrong sex").[78] He examined the white blood cells of these persons, looking for the presence or absence of a cell surface substance known as H-Y antigen.[28] Ordinarily (as depicted schematically in Figure 5-5), H-Y antigen is present on the surface of cells taken from men, but absent in women. In some transsexuals, Eicher found that the gender the individual felt himself (or herself) to be corresponded with the presence or absence of H-Y antigen, rather than with that individual's bodily appearance. If Eicher's observations can be replicated, this suggests that "sex change operations," which have been performed on some transsexuals, may actually serve to correct body phenotype (external appearance) to conform with H-Y antigen genotype.[79,80] Such knowledge is clearly not accessible via introspective methods alone. Even if a person could come to such an understanding, this would not necessarily make it any easier for him to change his behavior. There is little solid evidence that traditional psychotherapies, when used alone, are consistently effective in treating paraphiliac syndromes.

Behavior therapists tend to be less concerned with the historical antecedents of unconventional sexual behavior than with the question of what can be done about it. The feature common to most behavior therapies is that the therapist prescribes a course of action for the patient to follow which is intended to help decrease his attraction towards previously erotic deviant stimuli, such as children. Often a simultaneous attempt is made either to teach the patient more appropriate ways of achieving sexual satisfaction or to condition him to become sexually arousable by an age-appropriate consensual partner. This is clearly a formidable task.

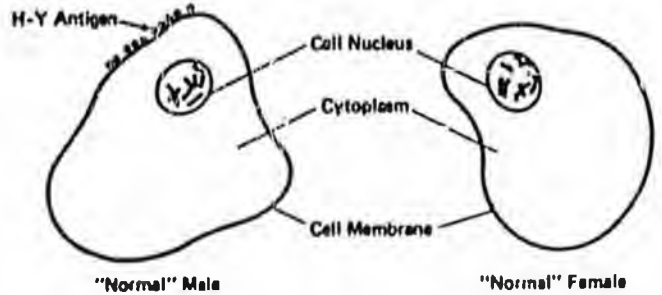


Figure 5-5. H-Y antigen is ordinarily present on the surface of cells taken from men but absent in women, as shown schematically in this figure.

Much of the literature regarding the behavioral treatment of sex offenders is anecdotal. However, Isaac Marks at the Maudsley Insitute in England documented good therapeutic results at two-year follow-up in treating transvestites (men who become erotically aroused by dressing in women's clothing), but the very same behavioral approach failed with transsexuals (men who feel themselves to be women).[81,82] Blair and Lanyon obtained good results in using behavior therapy to treat some exhibitionists.[83] Behavior therapy has not proven consistently effective in treating pedophilia. This suggests that some sexual deviation syndromes may be responsive to behavioral therapy treatments, whereas others may not. Perhaps more attention needs to be paid to differences amongst these syndromes, in addition to studying their common features.

Medication to Treat Sexual Deviation Syndromes

The purpose of utilizing medication to treat sexual deviation syndromes is to try to decrease sexual libido. The rationale for doing this is based upon the assumption that if one experiences sexual hungers of the sort that might cause problems, for example, a hunger for children, one is better off being less hungry. Because the various medications used for this purpose are not intended to make a man impotent and incapable of sexual activity, they may be most helpful in facilitating self-control in cooperative persons whose "offending behavior" is an expression of unconventional sexual tastes. They may be less helpful when the "offending behavior" is a manifestation of diminished intellect, psychosis, personality problems, or drug-induced intoxication—though such as hypothesis requires validation.

In utilizing drugs as a possible treatment method, one can address the issue of the relationship between biological factors, such as testosterone levels, and states of mind, such as those related to sexual desire. It is important to recognize, however, that the use of biological methods to successfully treat a condition does not prove that the condition and the treatment are directly and simply related. Aspirin can be used to treat a fever, but fever is not due to, or precipitated by, aspirin deficiency.

Amongst the drugs that have been used investigatively to try to treat sexual deviation syndromes are certain of the major tranquilizers such as benperidol.[84–86] Initially, use of these drugs for this purpose was based upon the observation that patients taking them for other reasons sometimes reported diminished libido. However, there is little substantive evidence to support the notion that these drugs can be used successfully in the treatment of paraphiliacs.

A class of drugs not yet utilized which may play a future role in treating these conditions are the gonadotropin releasing hormone (Gn-RH) agonists.[87] Again, rationale for their use is based upon the theory that the hormone testosterone "fuels" the sex drive in men. It is the increased production of testosterone by the testes around the time of puberty which correlates with (a) masculinizing bodily

changes such as deepening of the voice and growth of facial hair and (b) an increased psychological interest in sex. Prolonged (as opposed to brief) administration of Gn-RH agonists, for reasons that are poorly understood, paradoxically inhibits the release of follicle stimulating hormone (FSH) and luteinizing hormone (LH) from the anterior pituitary gland in the brain (see Figure 5-6). This, in turn, results in decreased testosterone output by the testes, which require stimulation from FSH and LH in order to produce testosterone. The adrenal gland, which also

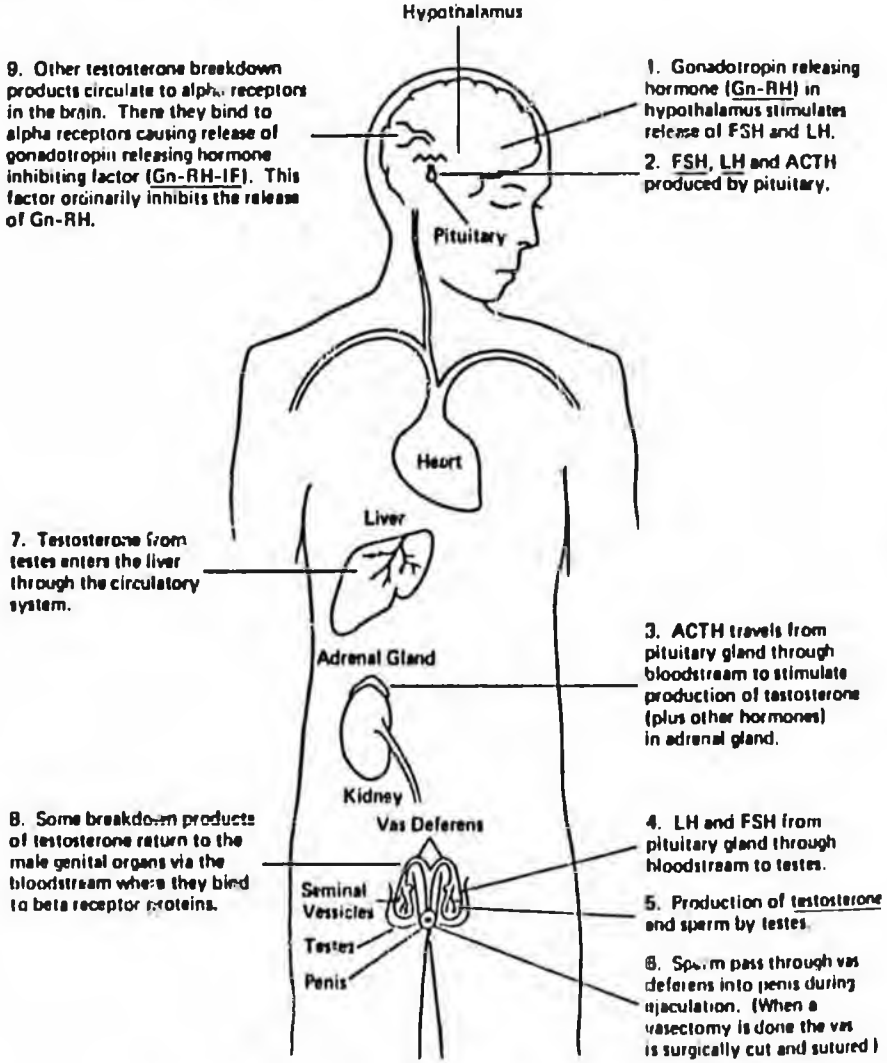


Figure 5-6. Relationships among various "male sex hormones."

produces testosterone in very small amounts, does not depend upon FSH and LH stimulation for this purpose. ACTH, another hormone produced by the pituitary gland, on the other hand, can influence adrenal testosterone output. A recently identified substance, Gn-RH inhibiting factor (see Figure 5-6), which may someday be useful in decreasing sex drive, has not yet been synthesized and therefore is unavailable for therapeutic purposes at present.[88]

Two other drugs that reduce testosterone levels which have been used in an attempt to treat sexual deviation syndromes are cyproterone acetate (CPA) and medroxyprogesterone acetate (MPA). Cyproterone acetate, which must be taken daily in pill form, is currently unavailable in the United States. A controlled double-blind clinical trial performed in Canada concluded that this medication could successfully reduce sexual interest and libido in a group of paraphiliac patients.[89] This investigation did not use a pharmacologically active substance with similar side effects for comparison purposes, however, thereby leaving doubt about whether study participants were indeed "blind" as to when CPA was or was not actually being administered. This raises the possibility that patients may have reported reduced libido as a psychological reaction to feeling "drugged" and that their feelings of diminished sexual interest may not have been attributable entirely to a pharmacologically induced decrease in testosterone levels.

When cyproterone acetate is administered, the pituitary gland does not increase production of FSH in response to decreased testosterone levels as occurs when an individual is castrated. This suggests that the drug has an effect not only upon the testes but upon the brain as well, presumably in areas relevant to sexual phenomenology and function. The same is true of medroxyprogesterone acetate.

None of the drugs used in the treatment of sexual deviation syndromes acts specifically to decrease deviant sexual desires while leaving conventional sexual interests intact. Thus, currently available medications do nothing to change sexual orientation; rather, if successful, they simply suppress sexual appetite in general.

Two major options are possible as a means of trying to reduce the presumed sex drive stimulating effects of testosterone. One is to try to interfere with testosterone production, whereas the other is to try to block the effects of testosterone (or more accurately, of its breakdown products) upon the brain. In the future, it may be possible to block the central effect of testosterone breakdown products upon the brain without interfering with levels of circulating testosterone peripherally. However, this cannot yet be done safely in humans.

The theoretical rationale for using testosterone-depleting medications to treat paraphiliacs would be strengthened if it could be shown empirically that intensity of sexual desire is indeed correlated with testosterone level. Davidson and colleagues showed that administration of testosterone to men whose plasma levels were below 150 ng per 100 ml led to a prompt increase in sexual appetite and activity.[90] However, Brown and others, in a study involving 101 men, demonstrated that variations in testosterone level within the intermediate range (275 to

875 ng per 100 ml in many laboratories) did not necessarily correlate with self-reports of sexual interest.[91] In animal studies, moderate decreases in testosterone level due to CPA administration failed to decrease sexual activity as significantly as had been expected.[92] Thus, in order to achieve therapeutic sex drive reduction, a significant decrease in testosterone level may be essential.

According to Laschet and Laschet, 80% of the men involved in a nonblind clinical trial reported significant reductions in sex drive in response to a daily oral dose of 100 mg of cyproterone acetate.[93] Twenty percent of the men required 200 mg per day orally, or 300 to 600 mg intramuscularly every week to ten days, in order to achieve a comparable effect. Follow-up of over 300 men for periods as long as eight years revealed few serious side effects when these dosages were employed.[94]

Stern and Eisenfeld showed that administration of radioactive-labeled testosterone to castrated rats pretreated with CPA did not result in its being bound to peripheral target tissues such as the seminal vesicles.[95] Thus, CPA appears to prevent the binding of testosterone to peripheral target organs. However, CPA does not block testosterone uptake in central hypothalamic brain regions thought to mediate sexual behavior.[96] In contrast, medroxyprogesterone acetate does, but it does not prevent testosterone binding peripherally. MPA inhibits FSH more than LH, whereas CPA inhibits only LH (see Figure 5-6). Thus, these two antiandrogenic drugs appear to exert an effect in slightly different ways. Both, however, reduce production of testosterone from its chemical precursors.[97,98] Antiandrogens may also exert an effect by preventing the rise in testosterone which ordinarily occurs as a consequence of sexual stimulation.[99]

Medroxyprogesterone Acetate (Depo-Provera). In the United States, medroxyprogesterone acetate is the drug that has been used most frequently to treat paraphiliac patients.[2] This medication is available in depot form, which means that it is prepared in such a fashion that it can bind to muscle, from where it is gradually released into the bloodstream. Injecting a depot drug into muscle accomplishes the same purpose as taking pills daily, in that both keep medication constantly present within the bloodstream so that it can act on appropriate tissue and organ receptors (see Figure 5-7). Some of the medication travels through the circulation bound to carrier proteins, whereas the remainder circulates in an unbound (or free) form. The customary starting dosage of MPA has been 500 mg per week of the 100 mg per ml solution. No more than 250 mg is given into a single injection site. The 100 mg per ml solution has greater bioavailability (i.e., it produces higher blood levels at a given dosage) and is less painful than the 400 mg per ml concentration. Periodic blood tests can be performed to document decreases in serum testosterone levels, and the medication is not feminizing (e.g., it does not cause breast enlargement). Dosage can be titrated so as not to cause total impotence, but studies to determine optimal dosage levels have yet to be performed.

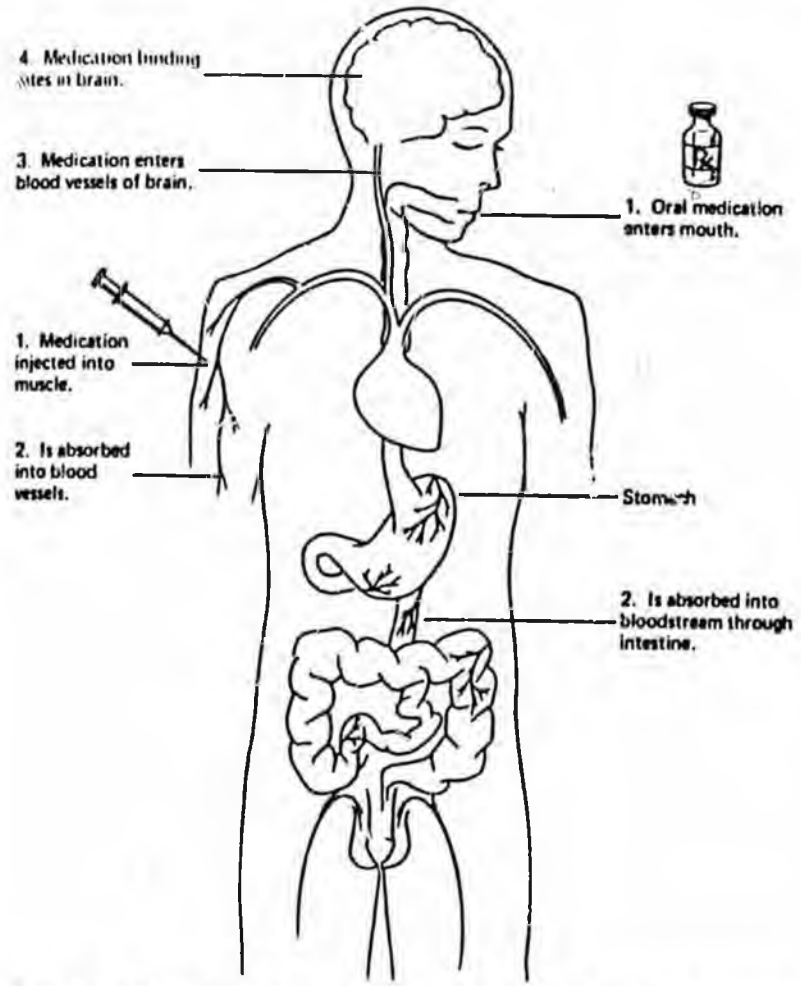


Figure 5-7. Comparability of oral and intramuscularly injected medication treatment.

The major side effects of MPA include weight gain, mild lethargy, cold sweats, nightmares, and hot flashes. Hypertension is common. Elevated blood glucose, dyspnea (shortness of breath), hypogonadism (shrunken testicle size), and malignant breast tumors (in female beagle dogs) have also been reported. The drug causes a decreased sperm count which makes impregnation unlikely, but the remaining sperm can be atypical which suggests that the fetus might be deformed were a man to father a child while taking the drug. It is believed that these major side effects are reversible if medication is stopped.

Table 5-5 shows changes in sexually deviant behavior in a group of 20 chronic paraphiliac patients treated with medroxyprogesterone acetate.[2] Of these patients,

Table 5-5. Changes in Sexually Deviant Behaviors in 20 Chronic Paraphiliac Male Patients Treated with Medroxyprogesterone Acetate.*

PATIENT	AGE (YEARS)	DIAGNOSIS	AVERAGE FREQUENCY OF SEXUALLY DEVIANT BEHAVIORS BEFORE TREATMENT†	DRUG TREATMENT‡		OCCURRENCE OF SEXUALLY DEVIANT BEHAVIORS	
				LENGTH	MAXIMUM DOSAGE	DURING TREATMENT	AFTER TREATMENT
1	34	Homosexual pedophilia	Once/week	7 years, 9 months	500 mg/week	None	Treatment dropout; no relapse less than 1 year after treatment
2	31	Homosexual pedophilia	Twice/month; 1 known arrest	1 year	300 mg/week	None	Treatment dropout; relapsed less than 1 year after treatment
3	30	Heterosexual exhibitionism	Twice/week	10 months	250–300 mg/week	None	Treatment dropout; relapsed more than 1 year after treatment
4	34	Homosexual masochism	4 times/week	3 months	200 mg/week	None	Treatment dropout; relapsed less than 1 year after treatment
5	27	Bisexual pedophilia	Twice/week	3 months	400 mg/week	None	Treatment dropout; relapsed more than 1 year after treatment
6	43	Transvestism; homosexual incest	7 times/week; 2 incidents	1 year, 4 months, intermittently	150 mg every other week	None	Relapsed less than 1 year after treatment
7	52	Heterosexual sadism	Once every 2 weeks for 25 years	3 years, 5 months	600 mg/week	None	Treatment continues; no relapses
8	29	Homosexual pedophilia	Twice/week; 6 arrests in 6 years	10 months	500 mg/week	None	Treatment dropout; relapsed less than 1 year after treatment
9	36	Homosexual pedophilia	Once every 2 months; 4 arrests in 6 years	2 years	500 mg/week	None	Treatment continues; no relapses
10	56	Homosexual pedophilia	Once/week; 14 arrests in 29 years	3 years, 9 months	300 mg/week	Relapsed	Treatment continues
11	40	Homosexual pedophilia	Twice/week; 7 known arrests	4 years, 2 months	400 mg/week	None	Treatment continues; no relapses
12	45	Voyeurism; heterosexual pedophilia	Twice/week; 5–8 arrests; numerous institutionalizations	5 years, 3 months	300 mg/week	None	Relapsed less than 1 year after treatment; treatment now resumed
13	27	Homosexual pedophilia	Twice/week since age 10	5 years, 9 months	200 mg/week	None	Treatment completed; no relapse more than 1 year after treatment
14	41	Homosexual pedophilia	Once/month; numerous arrests; 4 convictions, 4 reported parole violations	3 years, 8 months	500 mg/week	Relapsed	Treatment continues
15	37	Homosexual pedophilia; exhibitionism	Record unclear; probably several incidents/year	3 years, 9 months	350 mg/week	None	Treatment completed; no relapse less than 1 year after treatment
16	26	Homosexual pedophilia	Once/week	1 year, 1 month	200 mg/week	None	Treatment dropout; relapsed more than 1 year after treatment
17	24	Heterosexual voyeurism	Once/month	1 year	400 mg/week	Relapsed after alcohol consumption	Treatment continues; in prison
18	40	Heterosexual exhibitionism	Five times/day since age 11; first arrest at age 21; numerous others	2 years, 2 months	200 mg/week	None	Treatment dropout; relapsed less than 1 year after treatment
19	29	Heterosexual exhibitionism	Twice/week	2 years, 1 month	250 mg/week	None	Treatment dropout; relapsed less than 1 year after treatment
20	46	Heterosexual exhibitionism	Four times/week; binges of 20/day	2 years, 3 months	300 mg/week	None	Treatment continues; no relapses

*Sexually deviant behavior was considered to have occurred if the patient was accused of having or admitted having a deviant sexual contact (e.g., an episode of public genital exposure). Any occurrence of such behavior was scored as a relapse once treatment had been initiated, even if it did not come to the attention of the law as an official complaint.

†Based on institutional records and patients' statements.

‡Study participants who stopped taking medroxyprogesterone acetate did so against medical advice, except in the cases of patients 13 and 15. Some patients were irregularly compliant with medication even during the period when it was being prescribed.

15% (3 of the 20) showed recurrences of deviant activity while taking the medication, indicating that it is not 100% effective. On the other hand, 85% of these men were without further legal involvements while receiving medication, sometimes for periods as long as several years. The number of patients reported upon was small, and additional studies with larger numbers of patients need to be conducted. Some of the patients were self-referred and had no legal charges against them.

Most of the patients reported upon in Table 5-5 were not hospitalized to initiate treatment and were not required to take medication as a condition of probation. In time, many became noncompliant, sometimes because they believed themselves cured. Currently, most patients are briefly hospitalized for three or four weeks at the beginning of treatment, and subsequent outpatient compliance has improved dramatically.

The data presented in Table 5-5 show clearly that in most cases, when paraphiliac patients discontinue medications they relapse. This supports the hypothesis that this form of treatment is not a cure or a temporary catalyst to be used until psychotherapy can become effective. Rather, for the majority of patients, the medication appears to act as a sexual appetite suppressant. If deviant hungers are allowed to return, most patients seem again to be at risk of giving into temptation by satisfying those hungers. In a few cases, patients have reported that MPA fails to significantly decrease their sexual drive. Why this should be so is not known.

In the future, it will be important to conduct a controlled double-blind study in which neither the patient nor the evaluator is aware of whether MPA or a placebo with similar side effects has been administered. Fluphenazine, a drug with a similar intramuscular route of administration and similar side effects, which does not lower testosterone could be utilized for this purpose. Such a study could help document that any reduction in the frequency of sexual fantasies and in the intensity of erotic cravings experienced while receiving MPA was indeed related to lowered testosterone levels, rather than to psychological expectation or other factors independent of testosterone level. Such a study is now being planned. If it can be shown conclusively in this way that MPA does indeed decrease sexual appetite, changes in long-term recidivism rates could then also be ascertained amongst sex offenders treated with MPA, whose offending behavior either was, or was not, thought to be the manifestation of a sexual deviation syndrome.

Ancillary Care. Treating patients with antiandrogenic medications involves considerably more than simply providing injections. Although psychological counseling has not been shown to be a method capable of reducing sexual desire, such counseling may well be beneficial in other ways to the person who has been experiencing such desires. Although medication may decrease the lust a homosexual pedophilic man experiences for little boys, it cannot replace feelings of companionship, intimacy, affection, devotion, or love that may previously have been provided by children. Thus, once deviant erotic urges have been diminished by medication, an individual may also find counseling helpful in his effort to adopt a new life-style. For those who fail to respond to medication, supportive therapy and guidance to encourage efforts to resist temptation should be tried.

In initiating medication treatment, a brief period of psychiatric hospitalization lasting three to four weeks may be useful for three reasons, in addition to affording an opportunity for more comprehensive assessment. First, it removes the patient from unsupervised situations in which he might succumb to temptation before medication can begin exerting its anticipated effect. Secondly, many patients seem to develop a stronger alliance with potential help givers when living in hospital than when treatment is initiated on an outpatient basis. It is perhaps for this reason that brief hospitalization has sometimes been found to significantly increase subsequent outpatient compliance. Finally, while hospitalized, patients can speak with a group of other men having similar difficulties, which often brings a sense of relief and of being accepted as a person, thereby opening up the opportunity for greater candor. Many of these men have never before had a chance to talk openly with others without fearing that they would be perceived, and dealt with, in a demeaning way. Although the hospital staff in no way condones their behavior—quite the contrary—they do attempt to appreciate the basis for it, and they treat patients respectfully and kindly. The families of these patients can also be seen at this time, which can be important given the nature of their problems. How does a wife tell the neighbors that her husband has been arrested for exhibitionism or for sexually fondling the child next door? Patient confidentiality is maintained, but noncompliance is reported to the courts when appropriate. Rehospitalization may be required if outpatient treatment, which can include group therapy, is proceeding poorly. It is made clear to patients that a goal of therapy is to try to help them discontinue sexual behavior that violates the rights of others—not to make them feel better or less guilty about continuing it.

Surgery as Treatment for Sexual Deviation

The use of surgery to treat paraphiliac patients is well summarized in an article entitled "Therapeutic Sex Drive Reduction" written in 1980 by Dr. Kurt Freund of the Clark Institute of Psychiatry in Toronto.[100] The two major types of surgical procedures which have been used are (1) orchidectomy (castration) and (2) stereotactic neurosurgery. Stereotactic neurosurgery is performed with the aid of microscopic-sized surgical instruments capable of producing minimal-sized brain lesions. The effects of surgery (and of electrical and chemical stimulation or ablation of potential surgical sites) have been studied in both animals and men. Obviously, surgery should be considered as a therapeutic option for sex offenders only under extraordinary circumstances.

Castration. There are few well-controlled studies assessing the effects of castration upon an animal's tendency to approach a potentially available sexual partner.[100] Nevertheless, there appears to be little doubt that removal of the gonads

eventually decreases sexual interest significantly in most animals. In comparison to the rate of testosterone depletion, however, the corresponding postsurgical fading out of sexual behavior in castrated animals can be very slow. Furthermore, sexual interest may wane more slowly than sexual capacity as evidenced by the observations that (1) ejaculatory capacity often disappears before the animal loses the ability to sustain an erection and (2) the animal may continue attempting to mount receptive females even after erections have become rare.[101]

Individual differences amongst castrated animals are frequent. Pheonix and colleagues observed a substantial overall decline in virtually all aspects of sexual behavior in ten castrated monkeys.[102] However, while some of the animals ceased ejaculations immediately following surgery, others did not do so until over a year later. These postsurgical differences could not be attributed to presurgical differences in frequency of sexual behavior. The causes of individual variations in the rapidity with which various animals cease sexual behavior following orchidectomy are not clear, just as it is unclear why some humans continue to have apparently high libidos even after treatment with testosterone-depleting agents.

A number of studies have looked at the recidivism rate of sex offenses following castration in humans. Sturup and others conducted over 4000 follow-up examinations of 900 castrated sex offenders in Denmark over a 30-year period between 1929 and 1959.[103,104] There was definite recidivism of only 1.1% after castration, and if unclear cases were included, the recidivism rate was 2.2%. Wiffels reported comparable findings.[105] Ficher Van Rossum reported a 1.3% recidivism rate amongst 237 Dutch cases, and Kinmark (and Oster) reported similarly low rates on 307 Swedish patients.[103] Bremer found a 7.3% recidivism rate after five years in a group of 41 castrated sex offenders who, prior to treatment, had a recidivism rate of 58%.[106] Reported recidivism rates of castrated German sex offenders were also low.[107] This study also reported on normal German men forcibly castrated under Hitler.

Comu, in Switzerland, compared 121 castrated sex offenders with 50 offenders who had refused recommended castration.[108] Follow-up ranged between 5 and 30 years. The recidivism rate of castrated offenders was 5.8%, indicating that castration does not make further sexual offenses impossible. However, the recidivism rate of the 50 offenders who had refused castration was 52% (15 committed one additional offense, while 11 others committed between two and seven additional offenses each). Presumably, these differences in recidivism rate were a reflection of whether or not castration had been performed, although the possibility that the voluntarily castrated group contained more patients genuinely motivated to stop offending behavior cannot be entirely excluded. Prior to castration, both groups had a comparable frequency of offending behavior.

Freund pointed out that the degree to which sexual drive decreases after castration appears to depend upon the length of time of testosterone depletion.[100] Thus, if it is the case that some repeat sex offenses occur a short time after surgery, even further lowering of the recidivism rates might be possible by keeping patients in the hospital longer following castration.

Besides documenting changes in recidivism rate, a number of investigators obtained self-reports from sex offenders regarding potency. In many cases following castration, some degree of erotic desire and the capacity to perform sexually remained.[107–109] Hackfield pointed out that this does not present a problem in terms of treatment since the surgery fulfills its intent if it decreases sex drive sufficiently to enable the patient to refrain from acting upon unacceptable erotic urges.[110] Sturup described several cases in which pleasurable intercourse was successfully practiced for many years following castration in response to advances from consensual female partners.[104] Although a castrated man could reverse his condition by undergoing testosterone treatment, few cases have been detected in which this has occurred without medical approval.

Testosterone appears to be a prehormone which is broken down in the liver to form other metabolically active substances. Some of these bind to receptor sites in the brain, presumably stimulating areas related to erotic desire. Other testosterone breakdown products bind to receptors on peripheral tissues likely related to physical capacity to obtain erection and to ejaculate (see Figure 5-6). Freund suggests that someday it may be possible to administer active breakdown products of testosterone to castrated sex offenders, which will enhance their sexual capacity by affecting peripheral receptors without increasing sexual desire (via central brain stimulation) to a level where it becomes difficult to resist temptation.[100]

Neurosurgery. The second type of surgical procedure used in the treatment of sex offenders is stereotactic neurosurgery. In order to try to determine whether such surgery might be feasible in humans, a great deal of animal experimentation has been performed. That work has attempted to identify structures in the brain (1) that accumulate relatively large amounts of sexual hormones, (2) that lead to changes in the output of sexual hormones in response to either stimulation or ablation, or (3) that lead to changes in sexual behavior in response to either stimulation or ablation. Some researchers have also studied "experiments of nature" by looking at alterations in sexual behavior that correlate with human brain pathology.[111]

It is clear from studies done upon animals that lesions in some brain regions can readily decrease the frequency of sexual behavior without affecting either perceptual-motor capacity or circulating testosterone levels.[112,113] The area preoptica in the hypothalamus is one such region.[113] It seems to be particularly rich in sex hormone receptors. Other areas of the brain such as the limbic system accumulate sexual hormones to a lesser degree or not at all.

Exposing various areas of the brains of live animals to sex hormones to see whether sexual behavior will occur is another method used in an attempt to identify potential neurosurgical sites. This has produced some intriguing observations. Estrogen applied locally to specific hypothalamic sites in male rats leads to a lordotic

response—a backward elevation of the pelvis that facilitates intercourse in females.[112] Testosterone implants in certain hypothalamic sites can reactivate mating behavior in castrated male animals, but similar implants in other brain sites cannot.[114] Electrical stimulation in the dorsal part of the lateral area preoptica causes almost uninterrupted mounting and frequent ejaculations in male rats.[115]

In 1939, Kluver and Bucy described a syndrome in cats, produced by bilateral temporal lobectomy, that included intensified indiscriminate sexual behavior.[116] In 1954, Schreiner and Kling showed that this hypersexual activity could be abolished by castration but reinstituted with testosterone replacement therapy—which suggests that the behavior in question was sex hormone related.[117] They demonstrated that lesions to specific sites in the ventromedial nucleus of the hypothalamus could also abolish this hypersexual activity.

In 1966 a team of neurosurgeons performed stereotactic brain surgery on a homosexual pedophile, making a lesion in the ventromedial nucleus of the hypothalamus in the same area that had seemed to decrease hypersexuality when it had been ablated in Kluver-Bucy cats.[118] The patient subsequently indicated that his erotic fantasy life was virtually abolished and that he had lost his pedophilic urges. In 1979, Orthner (and others) reported that substantial therapeutic sex drive reduction had been achieved in 34 sex offenders treated neurosurgically in a similar way.[111,112,119] Although no formal instruments were used to confirm the validity of the patients' self-reports, in many cases follow-up extended over several years with no known rearrests. Major side effects were increased appetite, weight gain, and reported absence of dreaming. Freund feels that this surgical team may have obtained genuine success and that if it can be more conclusively established that neurosurgery appreciably lowers the recidivism rate of sex offenders, none of the reported side effects appeared disproportionate.

Schmidt and Schorsch cautioned that psychosurgery of this sort has sometimes been performed without proper safeguards with poor results.[120] They cited a study by Muller involving ten paraphiliac patients. Three years after surgery, four of the ten patients were lost to follow-up, three were said to be significantly improved, and two unimproved. Of the two unimproved patients, both subsequently underwent castration. The tenth patient in this series, a pedophile with sadomasochistic fantasies, was relased from prison after neurosurgery and was administered antiandrogenic medication until he complained of impotence with an age-appropriate girlfriend, at which time medication was stopped. Several weeks later he was accused of murdering a 10-year-old child.

A recent governmental task force appointed to consider the topic of psychosurgery in the United States concluded that it does hold therapeutic promise but recommended that its use be confined to designated research centers to try to assure proper safeguards.[121,122] Some authorities feel that brain surgery to attempt to decrease troublesome sexual appetites should for the time being be discontinued until further data from animal experimentation become available.[123]

Future Research

Figure 5-8 shows pictures obtained by means of a CAT scan and a PET scan. The term CAT scan is an abbreviation for computer assisted tomography. The equipment involved in producing these X-rays is manufactured by the EMI Corporation; thus, EMI scan is also sometimes employed.

When first marketed, the CAT scan represented a significant improvement over previously available X-ray procedures because not only could it show the presence of hard structures such as bones or tumors, but it was also capable of depicting the details of softer tissues such as kidney, lung, or brain. Furthermore, with the aid of computer analysis it could safely produce pictures of these structures corresponding to various depths within the tissue being X-rayed. X-rays of the brain taken by CAT scan depict structure but not function.

The term PET scan is an abbreviation for positron emission tomography. This test, like thyroid scanning, requires that the patient be administered a small amount of radioactive material—in this case glucose—which emits positrons. A computer attached to Geiger counter type sensors placed around the patient's head then produces a series of cross-sectional pictures of the brain at various depths. These pictures vary in color according to the amount of glucose being utilized as a source of energy at a given anatomical site. In this manner, the PET scanner can provide a picture showing which areas of the brain are most active metabolically at a given time—for example, during sexual arousal. Because the half-life (decay time) of radioactive glucose labeled in this fashion is short, the test is believed to be safe; it is no more dangerous than conventional thyroid scanning procedures which have been used medically for many years.

The PET scanner may help provide answers to the following questions. What areas of the brain are metabolically active during sexual arousal? Do these areas differ in persons with unconventional sexual orientations or interests? Do these areas differ in persons with organic anomalies such as Klinefelter's syndrome? What are the effects of testosterone-diminishing medications, which given in low or higher dosage forms, upon brain activity during sexual arousal?

PART IV: MEDICOLEGAL ISSUES AND SUMMARY

Medicolegal Issues

In considering the treatment of sex offenders with surgery or with antiandrogenic medications, a number of ethical and medicolegal issues must be addressed. Recently, in an editorial in the *American Journal of Psychiatry*, Dr. Seymor Halleck called for the establishment of guidelines regarding the use of antiandrogenic medications.[124] Two issues of concern to him related to (1) maintaining the constitutional rights of citizens, even those convicted of sex offenses and (2) the question

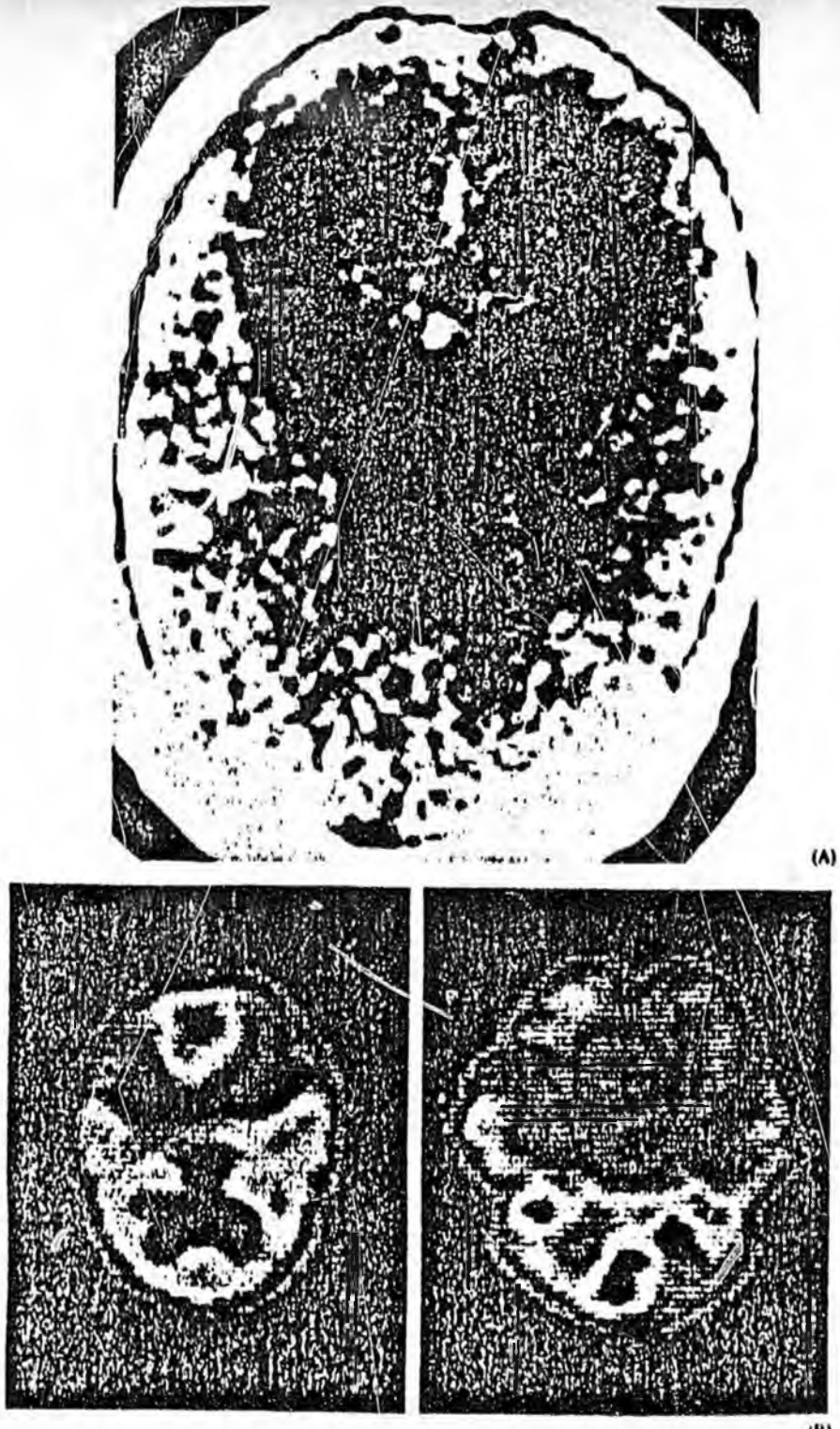


Figure 5-8. (A) CAT scan. (B) PET scan.

of whether persons facing prolonged incarceration are capable of giving informed consent regarding the use of this form of treatment.

In most democratic societies, individuals are generally free to do whatever they choose, as long as in doing so they do not interfere with the rights and well-being of others. When a person's behavior does pose a threat to the well-being of others, as clearly occurs when an individual rapes, for example, his freedom and rights are diminished for the common good. Thus, a convicted sex offender does not possess all the rights of a person who has not violated the law.

When an individual represents a threat to the safety of others, there is legal precedent for requiring him to take medication (e.g., measles vaccine). In this sense, then, requiring a convicted sex offender either to take antiandrogenic medications as a condition of probation or to go to prison may not be an unconstitutional violation of his rights.[125] Admittedly, making such a decision can be difficult, but just because the consequences of a decision may be difficult does not mean that one loses the capacity to choose. Cancer patients often have to choose between taking medication and dying.

Paraphiliac patients should not be denied access to antiandrogenic medications they wish to take which might be helpful in their treatment. Recently, a prisoner in Maryland successfully petitioned the court for the right to receive such treatment. Administering a properly informed, convicted person medication that may directly benefit him is very different from using him to study the effects of a drug, such as rabies vaccine, unrelated to his personal well-being. Paraphiliacs taking antiandrogenic medications can benefit if (1) they gain greater capacity for self-control, (2) they obtain relief from intrusive erotic obsessional fantasies, or (3) they avoid the necessity for quarantine from the community.

The medical profession needs to make clear the nature of the effects of psychiatric medications in general. They are not administered to control attitudes or behaviors such as those relating to political affiliations. They are not "mind controlling." Rather, they are usually given with the intent of increasing the capacity for self-control and restoring function (such as the ability to determine whether "heard" voices are real or imaginary).[126] Antiandrogenic medications are given in an attempt to increase rather than decrease self-control.[126]

Summary

Sexual deviation syndromes (paraphilias) are diagnosable psychiatric conditions manifested by (1) recurrent deviant fantasies, (2) intense erotic cravings, and (3) relatively stereotyped behaviors as a response to those cravings. The behaviors are stereotyped in the sense that exhibitionists expose themselves, whereas pedophiles seek out children and transvestites cross-dress. Paraphiliac syndromes are not necessarily mutually exclusive, but like conventional heterosexuality, their course is chronic. They may respond to biological treatments and may have associated

organic pathologies (such as Klinefelter's syndrome), but their etiologies are poorly understood.

Sexual offenses, as defined legally, may or may not be perpetrated by persons with one of these syndromes. When offending behavior is related to such a syndrome, (1) intramuscularly administered medroxyprogesterone acetate, (2) orchidectomy to diminish testosterone, or (3) cyproterone acetate may be helpful. However, antiandrogenic medication can only help if the patient is compliant. Orally administered medroxyprogesterone (at a daily dosage of 150 mg) has not been shown to be helpful.[128] It is not known whether antiandrogenic medication can help when offending behavior is unrelated to deviant sexual cravings, as when rape is committed opportunistically or in response to anger and hostility. Stereotactic psychosurgery is still a somewhat controversial procedure that is not yet widely enough available to be considered a practical treatment option for sexual deviation syndromes at this time. Behavior therapy may help some patients learn how to better resist their urges, but it may work less well with some paraphiliac syndromes than with others. When a sex offense is the reflection of a psychiatric illness such as schizophrenia or manic-depressive syndrome, medication treatment appropriate to that condition should be instituted. Legal demands for justice and safety as well as medical concerns for understanding care must both be considered, because each is important. When a person seeks help, his difficulties should be appreciated rather than scorned as perversions.

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SOLDOTNA OPTOMETRY CLINIC
JOHN A. DEMSKE, O.D.
DOCTOR OF OPTOMETRY
WOODRUEF BLDG. - SUITE 202, 155 SMITH WAY
SOLDOTNA, AK 99669

TELELPHONE (907) 262-3168

February 2, 1984

Representative Mae Tischer
Alaska State House of Representatives
Pouch V
Juneau, Alaska 99811

Dear Representative Tischer,

Per your request during the teleconference hearing in regard to HB 225, I offered to send you the names of individuals involved with the written national exam for therapeutic drug usage by optometrists. I have spoken with Dr. Norman Wallis, who holds the dual role of president of the International Association of Boards of Optometry(IAB) and the executive director of the National Board of Examiners in Optometry(NBEO). Dr. Wallis informed me that the exam is in the planning stages and that he expects it to be ready for use by Spring of 1985. If you have any further questions, you could contact Dr. Wallis at 5530 Wisconsin Avenue, N.W., Suite 950, Washington, D.C. 20815. PH (301)652-5192.

Dr. Wallis was out of his office until today and that is why it has taken me so long to get this information to you.

Much of the testimony concerned optometrists using drugs with supervision by a physician. Of the 38 states where optometrists use drugs, only North Carolina has any type of regulation regarding supervision, and this supervision is informal where the physician acts as a consultant. Unlike a nurse practicioner or physicians assistant , the North Carolina optometrist is solely responsible for the prescription. That is the way I would want to prescribe drugs and I'm sure that the majority of O.D.s in the state feel the same.

Several times during the teleconference the situation in Bethel was mentioned as an ideal situation regarding supervision. Since I worked there for five years, I think I can shed some light on the conditions. The optometrists have standing orders which specify drugs, their dosages and uages.

The standing orders are approved after a trial period in which the doctor of optometry demonstrates his knowledge and proficiency. After the trial period, the optometrist can use these drugs in-office and write precriptions without consultation or supervision. If the optometrist wishes to use a drug that is not listed on the standing orders, then a consultation is required and the consultants name is noted on the prescription.

In my opinion, the North Carolina law is a far superior model in terms of administration, logistics,and interprofessional communication. If you have any further questions on the North Carolina model, I suggest that you contact Dr. John Robinson, Sec.-Treas.-N.C. State Board of Optometry, P.O. Drawer 609, Wallace, N. C. 28466.

In closing, I apologize for the lateness and length of this letter, but I feel that this is information of which you should be aware. If you have any further questions, don't hesitate to contact me.

Sincerely,

J. A. Jemska OD

5-3

1) Dr. Borden

272-5353

276-8120

to offer his support to substitute HB 225 - wishes not to have bill "watered down"

2) Dr. Myers - Kodesh

486-5782

486-6117

to voice support for HB 225 in order to increase facilities of eye care to bush areas

3) Dr. McLaughlin - [illegible] an old family friend - called to support HB 225

Dr. Thorrepohn
sub HB 225

Dr Curtis Johnson
supports substitute to HB 225

Dr. Manuel Falconer
support sub. bill HB 225
279-8422

Dr. John Stark - Medical
supports Rep. Ball's
substitute to HB 225

HB225

OPTOMETRISTS

MAE –

This cut & paste of HB225 makes it internally inconsistent –

Section 1 authorizes prescription & use of legend drugs, but the definition of legend drugs is DELETED on p. 3.

Both DIAGNOSIS & TREATMENT is limited to the ANTERIOR SEGMENT of the eyes & eyelids. Someone would have to explain what is significant about the ANTERIOR PORTION of EYES AND EYELIDS.

⇒ The proposal doesn't limit INJECTIBLES or CONTROLLED SUBSTANCES as the summary suggests.

The CS for Senate bill will be available by the HEARING time. It allows use of DRUGS FOR DIAGNOSTIC NOT TREATMENT purposes and sets out the Rules Board to establish what drugs may be prescribed – They MUST be approved by the Board of Medical Examiners.

I haven't read it yet – That's from Senate HESS STAFF.

10:15 AM

Dave

Trager - Dept of Econ Development
Opposes "Legend" drugs term
means Controlled

Dr Graves - Dir written testimony favors
Dr. Swanson - Substitute Bill: favors
Dr Harrison - Opthomologists. Opposed
1. Drugs
2. [illegible]
Dr Swanner - Kenai - optometrist - favors
Dr Sam McCloskey - physician opposed
1. no pharmacology training
2. failure rate of Hallbrand [illegible] very high
3.

Dr. John Cobbitt - Optometrist. favors. North Pole
Tom McLaughlin - Sitka - Optometrist favors
Ed Smith - Ketchikan - optometrist - favors
Dr Phil Bach - Optometrist - favors
"Inadequately trained" is not the case
Professional wouldn't ask for something that would endanger their
profession
John Dempsey - Bethel - Optometrist - favors
has administered drugs & diagnosed disease
West Virginia has 7 year unmarred track record in
drug [illegible].
(*) Dr John Weatherby - Clinical - Bethel - Gen Practice
favors bill. Says Bethel has good
experience giving optometrists therapeutic authority.

WHILE YOU WERE AWAY

FOR Mac DATE 5-2 TIME ____ A.M. P.M.

FROM Dr. Jim Falkner

OF ____

PHONE 272-2557 (AREA CODE / NUMBER / EXTENSION)

MESSAGE

supports substitute bill to HB 225

Not necessary to call back.

SIGNED

- TELEPHONED
- RETURNED YOUR CALL
- PLEASE CALL
- WILL CALL AGAIN
- CAME TO SEE YOU
- WANTS TO SEE YOU

TOPS FORM 4002

WHILE YOU WERE AWAY

FOR _____ DATE 3:25 TIME 3/2 A.M. P.M.

M Dr. Titzel

OF Arch Optometrist

PHONE _____
AREA CODE NUMBER EXTENSION

MESSAGE Please Support Substitute bill 225

X	TELEPHONED
	RETURNED YOUR CALL
	PLEASE CALL
	WILL CALL AGAIN
	CAME TO SEE YOU
	WANTS TO SEE YOU

SIGNED

TOPS FORM 4002

WHILE YOU WERE AWAY

FOR Mom DATE 5/2 TIME 3:55 A.M. P.M.

M Dr. Bolson

OF Optometrist

PHONE ____ AREA CODE ____ NUMBER ____ EXTENSION ____

MESSAGE Please support the substitute bill on optometry that Rep. Hall will introduce tomorrow.

Cathy

SIGNED

- [x] TELEPHONED
- [ ] RETURNED YOUR CALL
- [ ] PLEASE CALL
- [ ] WILL CALL AGAIN
- [ ] CAME TO SEE YOU
- [ ] WANTS TO SEE YOU

TOPS FORM 4002

Dr Deremus Opthomologist
(V. A Hospital patient)

military professionals
mentioned at least twice.

Really not credible

Summary of changes in the substitute bill

1. Excludes injectibles and controlled substances

2. Limits scope of therapeutics practice to anterior segment. Defines anterior segment.

3. Sets specific training requirements (conforms to current educational practice)

KP

Dr Deramus – FBks Optomologist – Dist. Official Surgeon
Opposed

Dr - Mike Franklin – G.P. opposes – diagnosis w/drugs okay but treating injuries, etc not okay.

Dr Richard Perry – Pres. AMA – opposes Page 2 line 20-22. says there is no need to expand services.

MAY 10 1983

May 5, 1983

Representative Mae Tischer
Co-chairman House HESS Committee
Pouch V
Juneau, AK 99811

Dear Ms. Tischer:

I am writing you in support of the bill which would allow optometrists to use pharmaceutical agents in their clinical practice in the State of Alaska. I know this topic is an emotional issue, however, I feel that careful review of other states, etc. will substantiate the fact that with proper education and training it is safe. As well, in the present day of astronomical health care costs I feel it would be cost efficient. I also feel it can be demonstrated that better and more appropriate referrals to physicians can be made with the use of pharmaceutical agents by optometrists.

I write to you with a personal background of graduating from both optometry school and medical school. I am very comfortable presently and have no axe to grind, rather simply wish to express my personal heart felt opinion.

Let me now address some specific aspects of optometric and medical education by my own first hand experience.

Medical school traditionally prepares the student in general medical and surgical background for post-graduate training programs. Detailed anatomy and physiology of organs such as the eye is not emphasized during medical school. As well, during surgical rotation in medical school it is uncommon to be exposed to ocular surgery. Because heart disease, cancer, and stroke are the biggest killers of the U.S. population, medical school clinical training is heavily devoted to general internal medicine, general surgery, obstetrics--gynecology and pediatrics. There are usually fourth-year electives in 4-12 week blocks where a student may increase his/her exposure to subspecialty medical and surgical areas such as: ophthalmology, ear/nose and throat, urology, pulmonary medicine, cardiology, etc. In my experience a small minority of students choose ophthalmology as a clinical rotation.

By a small personal survey in the area of Oklahoma in which I reside, most primary care physicians (general practitioners, family practice, internists, and pediatricians) state they had from one to three weeks of medical school devoted to ophthalmological care. This includes both didactic coursework and clinical experience. I do not need to remind you that these physicians treat eye diseases on an unrestricted basis.

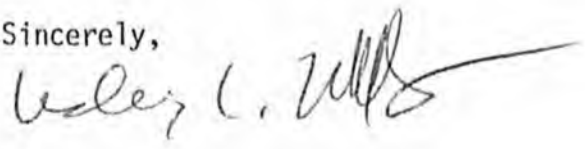
On the other hand, optometry school is mostly devoted to ocular training. There are courses in general pathology and ocular signs of systemic disease because the optometrist is responsible to detect systemic diseases with ocular manifestations and to make appropriate referrals. The detailed ocular anatomy, ocular physiology, ocular pathology, and ocular pharmacology training in optometry school is far superior to the same ocular topics in any general medical school course in the country. This is not to slight medical education, there simply is not enough medical school curriculum time to devote to the eye because of training in vital organ systems such as the heart, lung, vascular system, etc.

Secondly, I will discuss my personal experience with side effects of ocular pharmacologic therapy. This section will be very brief as I have never had a patient with anything other than a very minor side effect from ocular pharmaceutical agents. I have seen a few mild allergic reactions and none of these serious and none had any evidence of systemic reactions such as elevated blood pressure, rapid heart rate, arrhythmias of the heart, etc. None ever required hospitalization and certainly there were no deaths. I saw very few significant side effects and all which did occur were very minor in nature.

In summary I would like to point out that ophthalmologists are vitally needed. The medical profession would be in sad shape without them because of their expertise in the area of ocular trauma, cataract surgery, retinal surgery, serious ocular infections, etc. However, in a rural state the ophthalmologists are primarily in large and medium sized cities with a poor distribution in the rural communities.

I also strongly feel that optometrists are vitally needed. Optometrists are well distributed in rural communities and by definition serve as primary care professionals. In my opinion, the patient, particularly in the rural areas and small town, will be the beneficiary of modern optometric practice. With the use of pharmaceutical agents, disease detection will be facilitated thus making the referral system into medicine more efficient. As well, this will save the patient a lot of inconvenience and time. I feel optometrists should be allowed to practice modern optometry which includes pharmaceutical agents. I believe the key to utilizing these medications by health care professionals is education and training.

Sincerely,



Lesley L. Walls, O.D., M.D.
P.O. Box 78
Glenpool, OK 74033

cc Representative Adelheid Herrmann
Representative Mike Davis
Representative Peter Goll
Representative M.W. Miller
Representative Niilo Koponen

LLW/jjm

Alaska State Legislature

District 11
3305 Oregon Drive
Anchorage, Alaska 99503

While In Juneau
Pouch V
Juneau, Alaska 99811
(907) 465-3759

Representative Mae Tischer

May 10, 1983

Lesley L. Walls, O.D., M.D.
P.O. Box 78
Glenpool, OK 74033

Dear Lesley:

Thank you for your letter and comments on HB 225 relating to optometrists and authorization for their prescribing ophthalmic drugs. I agree that this authority, properly regulated, would reduce costs and increase service to Alaskan residents. I will support this bill.

Sincerely,

Mae Tischer

Representative Mae Tischer
District 11

MT/cw

MEMBER: Rules
CO-CHAIR: Health, Education & Social Services
VICE-CHAIR: Community & Regional Affairs
FINANCE SUBCOMMITTEES: Health & Social Services • Rural Education Budget Oversight • Corrections

Official Business

Alaska State Legislature

House of Representatives

Committee on

Health, Education & Social Services

Pouch V
State Capitol
Juneau, Alaska 99811

To: HESS Committee
From: Dave Palmer
Subject: HB 225, SB 189, Optometrist Diagnostic drugs
Date: April 28, 1983

Attached is a copy of a working draft of a CS for SB 189.
The bill is different from the bill before the committee in several ways:

-The Board of Examiners in Optometry is expanded by one member, who is a physician.

-The Board is authorized to adopt regulations concerning the use of diagnostic drugs.

-The state medical board shall provide "advice and guidance" to the Board of Examiners in Optometry in developing a list of diagnostic druge and their dosages.

-provides for continuing education

-requires an optometrist to advise the patient and refer the patient to a medical specialist if a pathological condition is found.

-When using the term "Dr." or "Doctor", the word Optometrist must be used also,

-specifies requirements for an optometrist to be licensed to prescribe diagnostic drugs.

-optometry is defined to allow the use of diagnostic drugs.

-defines diagnostic drugs: cycloplegic, mydriatic or topical anesthetic....

-

Heard 4/27 Hearing

TESTIMONY IN SUPPORT OF HOUSE BILL 225

Health, Education and Social Services Committee

Alaska State House of Representatives

April 27, 1983

Steve Dobson, O.D.

Gentlemen of the Committee, my name is Steve Dobson. I am an optometrist in private practice in Anchorage. I am a 1980 graduate of the Southern California College of Optometry, and in 1981 completed a one year residency in rehabilitative optometry at an outpatient clinic of the Veterans Administration hospital in Los Angeles.

My testimony will focus on optometric education, for the most frequent charge raised by ophthalmologists in opposing this type of legislation is that optometrists do not have a physician's broad medical background, which they say is necessary in order to do competant diagnosis and treatment.

It so happens, like many propaganda arguments, that this one has a grain of truth in it. What may appear to be a local inflammation can actually be a manifestation of infection or dysfunction elsewhere in the body. Experience in administering a variety of drugs in a variety of modes makes it easier to learn new drugs and new treatment protocols.

However if the argument is carried too far, it begins to break down. One can say that it is useful to be trained as a general physician before treating specific parts of the body. But is it absolutely necessary? Ophthalmologists, who are trained on the physician-specialist model, would say that a physician's background is necessary even to be able to judge when to treat a case and when to refer it for more specialized care. However it takes no special expertize to realize that if that were the case, then dentists and podiatrists, who are not trained as physicians, would be incompetant or only marginally competant.

Let's take a closer look at the alternative model of education, on which dentists, podiatrists and optometrists are trained. For convenience, I will consider just dentistry and optometry, but podiatry follows similar principles. Dentists and optometrists have at least as many hours of training in anatomy as physicians. But that training is structured differently. Their studies in gross human anatomy give somewhat less emphasis to the body below the neck but more emphasis in the head and neck region, as compared with medical students. This is followed by intensive study of organ systems of special interest - the teeth and oral cavity for dentists, the eye and adnexa for optometrists. This is a level of detail that physicians do not encounter until they enter specialty residencies. Other courses, such as general

physiology, microbiology and general pathology, are also slightly less detailed than those given medical students. But again, when corresponding studies in the target organ systems are added in, the hours exceed those of the medical student. If we take the process one step further and add the hours of the medical student and the resident together, the total hours in any given subjedt would now be greater than those for the dentist and optometrist. For optometry and dental students, classroom and laboratory time in these subjects, called basic science, totals about a thousand hours, or 25% of the total clock hours in the curriculum. The remainder is given over to specialized theory and procedures courses, and experience in the clinic.

At this point, let me interject that in case it should be supposed or alleged that optometric courses are not of the same quality as dental courses, I would point out that where optometry and dental schools are co-located, as at the University of Alabama in Birmingham and the University of Houston, optometry and dental students not only take the same courses but sit together in the same classrooms and laboratories whenever there is enough commonality in content to make this practical. For example, general physiology and microbiology in the case of Birmingham. In both optometry and dental schools, physicians are used in their areas of greatest expertise, primarily pathology and therapeutics. Pharmacology is taught by pharmacologists and physiology is taught

by physiologists.

Courses in the whole body emphasize unifying principles, which serve as a foundation for understanding all regions. At the stage of target organ study, specific interrelationships between target organ pathology and systemic pathology are learned. It is also at this stage that the student learns what effects a drug may have on other organs of the body.

Without putting too fine a point on it, it is hopefully evident from this that someone who will be working with a portion of the body and dealing with a specific set of interrelationships between this portion and the rest of the body does not have to have the same kind of whole body training as someone who will be treating many different parts of the body. The specializing physician model of education is a good one, but is it enough better than the dental model to justify the increased costs?

With respect to drugs, however, optometry has differed from dentistry until recent years. When the optometry laws were enacted in the first quarter of the century, restrictions against drug use were inserted into nearly every statute as a compromise with the physicians and oculists of the day, who opposed enactment of the optometry laws. In the succeeding years, optometry developed strong capabilities in the detection and diagnosis of ocular

pathology, but its lack of access to prescription drugs effectively limited its therapeutic services to conditions treatable with over the counter drugs, compresses and mechanical procedures. During the same period, ophthalmology developed from a primitive extension of general medicine into a recognized specialty. In the 1970s general and ocular pharmacology were removed from their positions within other courses in the optometric curriculum, and expanded into full fledged, free standing courses. Concurrently, optometrists introduced bills that would allow them to use drugs to aid in diagnosis, on the theory that such limited legislation would be easier to pass. There began a slow, state by state process of passing legislation, against fierce ophthalmological opposition. As of now, 36 states allow some form of drug use by optometrists. In 1976, West Virginia became the first state to enact legislation allowing optometrists to use drugs for both diagnostic and therapeutic purposes. In 1977, North Carolina passed a similar measure and Florida received an attorney general opinion favorable to the use of therapeutics. In 1980, Oklahoma passed enabling legislation. In support of these states, nearby optometry schools strengthened their programs in therapeutics. At present, drug-based therapeutics is taught at an undergraduate and postgraduate level by Pennsylvania College of Optometry in Philadelphia and Southern College of Optometry in Memphis, and by the University of Alabama at Birmingham School of Optometry on a postgraduate basis. Other schools are planning similar programs. Pennsylvania's therapeutics course was taken by a

majority of Alaska's ODs last year. Opportunities for additional clinical experiences in therapeutics developed quickly and dramatically. Federal law in 1976 formally established Optometry Services within the Veterans Administration hospital system. These Optometry Services provide primary eye care therapeutics, usually under the prescription signing arrangement noted by Dr. Demske. A number of the Services have developed 1 year residency programs for optometrists, such as the one I went through. Opportunities are also available for ODs and undergraduate optometry students to study at these hospitals for shorter periods of time. In Atlanta, there is a three year old optometric clinic that does nothing but treat ocular pathology on referral from physicians and optometrists in the area. Students from four optometry schools do semester rotations there, and similar centers are being planned in other cities. There is thus developing a spectrum of training opportunities, both basic and advanced, for optometrists in therapeutics.

It appears that at long last the quirks of the original optometry laws are being removed and optometry will be allowed to undergo a more natural evolution. Optometry will continue to compete with ophthalmology, as podiatry competes with orthopedic surgery, though in the case of optometry, surgical training is not on the horizon. While the medical branches may not like it, such competition is good for the public. Optometry, like podiatry, can now offer quality, cost effective services in areas where specialists are overtrained

and general practitioners are undertrained. Dentistry has no competition from medicine, but its training is also based on the more cost effective model.

One more thing needs to be said. Ophthalmologists have criticized other aspects of optometric education, saying that there are too few MDs teaching in optometry schools and that clinical experiences are not adequate. In point of fact, ophthalmologists have actively tried to hinder the education of optometrists. There is a great deal of peer pressure on ophthalmologists, and through them, on their colleagues in other branches, not to teach in optometry schools. In 1955, the American Medical Association, at the request of the Section on Ophthalmology, adopted a resolution declaring it unethical for a doctor of medicine to teach in a school or college of optometry. Such resolutions have more than nominal influence upon physicians, for unethical behavior can serve as the basis for denial of hospital privileges by individual hospital medical staffs. Some physicians ignored the directive and continued to teach, and schools filled in the gaps by using osteopaths, who were not affected. The resolution was rescinded 11 years later, in 1966.

Ophthalmology has also opposed virtually every piece of legislation that would facilitate the professional development

of optometry, including funds for construction of optometry school buildings and clinics, Health Professions Student Loans, and capitation grants. Fortunately, most Congressmen and legislators saw the value of optometry to society, and the efforts of ophthalmology to block funding were largely unsuccessful. From 1964 to 1980, ophthalmologists were able to prevent reimbursement to optometric patients for services covered under Medicare. As a result, optometry lost 30% of its patient population over age 65. It also deprived optometry school clinics of a prime source of pathology for teaching purposes. It is not fair to criticize something when you are actively trying to bring about that which you criticize.

In conclusion, I would ask that you allow optometry in Alaska to take full advantage of the educational opportunities that are unfolding, so as to maximally benefit the public which it serves. Overly restrictive compromises will simply result in further legislative battles down the road. The bill in its present form conforms to the framework for decision making that has stood the test of time in other professions. It makes no legislative sense to take a responsible profession out of one box and place it in a slightly larger box. Given the opportunity, optometry will exercize the same good judgment as the other professions. And the public will be the beneficiary.

STATE OF ALASKA
THE LEGISLATURE

LEGISLATIVE AFFAIRS AGENCY

POUCH Y · STATE CAPITOL
JUNEAU, ALASKA 99811
907-465-3800

M E M O R A N D U M

May 9, 1983

SUBJECT: Optometry
(HB 225)

TO: Representative Milo Fritz
Co-Chairman, House Health, Education
and Social Services Committee

Representative Mae Tischer
Co-Chairman, House Health, Education
and Social Services Committee

FROM: Russ Josephson
Legislative Counsel

I would like to bring to your attention Sec. 6 of HB 225, as introduced. In this section, AS 08.64.360 is amended by adding the words "an optometrist" to those excepted from practicing medicine without an appropriate license. It is my feeling that the amendment of AS 08.64.360 in Sec. 6 would provide us with a "cleaner" statute if it read, "Except as provided under AS 08.64.170" rather than as it is amended in Sec. 6 of HB 225. You will note that in Sec. 1 of the bill we have excepted those practicing optometry by amending AS 08.64.170(a). Therefore, I would recommend that Sec. 6 of the introduced bill be amended.

If you have any questions about this matter, please do not hesitate to call.

RJ:ljb
18/013

POSITION PAPER
HOUSE BILL NO. 225

"An Act relating to the practice of optometry and authorizing the use of prescription drugs by optometrists."

This Bill would permit the use of legend drugs by certain optometrists and would delete from the definition of optometry the restriction against the use of drugs. Legend drugs as defined in Section 5 of the Bill "means drugs whose containers must bear a label prohibiting dispensing without a prescription". The Bill also specifically permits optometrists to engage in the "diagnosis and treatment, including the use of drugs, of inflammations, infections and injuries of the eyes and eyelids".

A majority of states now allow optometrists to use diagnostic topical drugs, either through specific enabling legislation or through the lack of specific prohibitions. Few, if any, permit the use of therapeutic drugs. This Bill, as now written, would apparently permit the use of any drug, whether topical or systemic, in the diagnosis and treatment by an optometrist of inflammations, infections and injuries of the eyes and eyelids. Arguably, the proposed legislation may be construed to permit the practice of opthalmologic surgery by optometrists since surgery is not specifically prohibited.

Even the use of diagnostic topical drugs by optometrists, i.e., drugs which cause the pupil to open or to close down or which paralyze the muscles which control the shape of the lens, has been controversial. Those in favor of the use of drugs by optometrists argue that optometric services are more widely distributed than ophthalmologic services and that the optometrist serves as an entry point for primary eye care. The use of diagnostic drugs is said to expand the ability of the optometrist to recognize eye abnormalities and to increase medical referral for diagnosis and treatment. The optometric group also states that the use of diagnostic drugs rarely causes adverse effects.

Those opposing such legislation argue that the use of drugs would not materially improve the capacity of optometrists to recognize abnormalities. Optometrists are not expected to diagnose diseases of the eye and, if a departure from normal is noted, the patient is expected to be referred to a physician for diagnosis. The concern on the part of the medical community is that the optometrists would be making diagnostic judgements which the physicians do not believe them qualified to make. Moreover, the medical community notes that adverse reactions, while admittedly rare for certain of the diagnostic drugs, can have extremely serious consequences when they do occur. A higher rate of predisposition to a certain type of glaucoma in Alaska Natives is cited. Use of mydriatic drugs could possibly precipitate an attack. The potential use of therapeutic drugs can be expected to raise even greater concern.

Limitations are placed on the use of certain diagnostic drugs by legislation in some states. In Oregon, for example, the Board of Optometry is empowered to designate the diagnostic pharmaceutical agents for topical use, but provides that the designation shall be with the advice and guidance of the Board of Medical Examiners.

Some states define the type of training in pharmacology which would be required before an optometrist would be permitted to use even diagnostic drugs. HB 225 contains no such provisions.

The Department of Health and Social Services does not support HB 225 in its present form because of the overly broad definition of the types of drugs which would be authorized, vagueness with regard to the limits of optometric practice and lack of provisions with regard to the educational qualifications required for use of drugs. If the Legislature chooses to authorize use of certain drugs by optometrists, the Department suggests that definitions and restrictions similar to those in use in other states may be advisable and that the professional opinion of the medical and optometric communities should be sought to insure the health and safety of the general public.

Recommended by: E. S. Rabeau

E. S. Rabeau, M.D., Director
Division of Public Health

Date: 2/25/83

Approved by: Robert London Smith

Robert London Smith, Ph.D.
Commissioner
Dept. of Health & Social Services

Date: 3/1/83

STATE OF ALASKA
PRELIMINARY STATEMENT OF FISCAL IMPACT

Bill No: House Bill No. 225 Date on Bill: February 23, 1983
Title: "An Act relating to the practice of optometry and authorizing the use of prescription drugs by optometrists."
Sponsor: Hurlbert
Requestor:

1. Estimated fiscal impacts on:

a. Expenditures:

(Thousands of Dollars)

			FY 83	FY 84	FY 85	FY 86		
Capital			0	0	0	0		
Operating			0	0	0	0		
Total			0	0	0	0		

B. Revenues:

Revenue								

2. Source of funds to offset fiscal impact of bill:

3. Assumptions:

4. Disclaimer:
This statement has not been reviewed by OMB in the Office of the Governor. It does not represent the policy of the Sheffield Administration or the final estimate of fiscal impact.

Prepared by: Dean F. Tirador, M.D. Phone: 465-2113
Division: Public Health Date: February 25, 1983

Approved by Commissioner: Robert London Sheffield, Ph.D. Date: 3/1/83
Department: Health & Social Services

5. Distribution:
Original to Legislative Finance
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2/8/83

STATE OF ALASKA
FISCAL NOTE

Revision Date 4/12 , 1983

I. REQUEST

Bill/Resolution No.: HB 225
Title: "Optometrist - Use of Drugs"
Sponsor: Hurlbert
Requestor: HESS Committee

II. FISCAL DETAIL

Agency Affected: Commerce & Econ. Devp.
Program Category Affected: Public Prot.
BRU, Program of Subprogram(s) Affected: Occupational Licensing

EXPENDITURES/REVENUES: (Thousands of Dollars)

	FY 83	FY 84	FY 85	FY 86	FY 87	FY 88
OPERATING						
100 PERSONAL SERVICES		31.6	33.1	34.6	36.2	37.9
200 TRAVEL		2.0	2.1	2.2	2.4	2.5
300 CONTRACTUAL		1.5	1.6	1.7	1.7	1.8
400 COMMODITIES		0.5	0.5	0.6	0.6	0.6
500 EQUIPMENT		2.7	-0-	-0-	-0-	-0-
600 LAND & STRUCTURES						
700 GRANTS, CLAIMS, ETC.						
TOTAL OPERATING		38.3	37.3	39.1	40.9	42.8
CAPITAL						
REVENUE						

FUNDING: (Thousands of Dollars)

GENERAL FUND		38.3	37.3	39.1	40.9	42.8
FEDERAL FUNDS						
OTHER (Specify Source)						

POSITIONS:

FULL-TIME		1	1	1	1	1
PART-TIME						
TEMPORARY						

III. SOURCE OF FUNDS TO OFFSET FISCAL IMPACT OF BILL:

Not identified by sponsor.

IV. ANALYSIS: Attach a separate page for any Analysis

Prepared By: Darrell Miller
Division: Occupational Licensing
Phone: 465-2535
Date: 4/12/83

Approved by Commissioner: Richard A. Lyon
Department: Commerce & Economic Development
Date: 4/13/83

Distribution:
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3/8/83

HB 225 FISCAL IMPACT

(Note: 5% inflation factor projected for FY '84 through FY '88 for operating cost)

100 PERSONAL SERVICES - (FY '83 salary schedule plus 5% inflation factor)

1 Licensing Examiner, Range 12A, General Government, 12 months, to be located in Juneau	$31,602.00

200 TRAVEL

4 board meetings annually (2 days each @ $80.00/day per diem = $160.00 x 4)	$ 640.00
Transportation - board meetings annually ($350.00 each x 4)	1,400.00
	$ 2,040.00

300 CONTRACTUAL

Postage, telephone, printing, publications and operating costs	$ 1,500.00

400 COMMODITIES

Stationery, typewriter ribbons, pens, pencils, and other miscellaneous desk top supplies	$ 500.00

500 EQUIPMENT (One time cost, FY '84 only)

1 desk, double pedestal, 60" x 30"	$ 427.00
1 chair, swivel w/arms	202.00
1 typewriter, IBM Selectric II	1,129.00
1 typewriter table	94.00
1 chair, side, without arms	104.00
1 desk calculator	332.00
1 book case	138.00
1 file cabinet, 4 drawer, legal with lock	306.00
	$ 2,732.00

One position total:	$38,374.00

SPECIFIC LEGISLATION: 32 States

The list (and dates of enactment) of the 32 states with current legislation specifically authorizing optometrists to utilize pharmaceutical agents is as follows:

STATE	DATE OF ENACTMENT
Rhode Island	July 16, 1971
Pennsylvania	March 1, 1974
Tennessee	May 8, 1975
Oregon	May 20, 1975
Maine	June 24, 1975
Louisiana	July 6, 1975
Delaware	July 10, 1975
West Virginia*	March 4, 1976
California	July 9, 1976
Wyoming	February 17, 1977
New Mexico	March 4, 1977
Montana	April 12, 1977 (at 10:10 a.m.)
Kansas	April 12, 1977 (at 2:00 p.m.)
North Carolina*	June 3, 1977
Kentucky	March 29, 1978
Wisconsin	April 29, 1978
Nebraska	February 13, 1979
South Dakota	March 15, 1979
Utah	March 21, 1979
North Dakota	March 22, 1979
Arkansas	April 2, 1979
Nevada	May 25, 1979
Iowa	June 8, 1979
Georgia	February 14, 1980
Arizona	April 25, 1980
Idaho	March 23, 1981
Oklahoma	April 6, 1981
Washington	April 23, 1981
Missouri	July 24, 1981
Minnesota	March 8, 1982
Mississippi	March 17, 1982
Virginia	February 25, 1983

*both diagnostic and therapeutic use

NOTE: None of these laws has ever been repealed. However, a July 30, 1982 opinion of the Texas state attorney general has rendered that state's unusual provision (an amendment to the medical practice act), which was enacted on August 5, 1981, inoperative.

SOURCE: Dennis Swarner O.D & Robert O'Connell, O.D.

GENERAL LEGISLATION: 4 states

There are four states which authorize the use of pharmaceutical agents by optometrists by extant general law or favorable attorney general opinion:

Alabama	(diagnostic use)
Florida	(diagnostic and therapeutic use)
Indiana	(diagnostic use)
New Jersey	(diagnostic use)

NOTE: In addition, in Michigan, while there is no statutory prohibition of the use of pharmaceutical agents by optometrists, there is a negative opinion of the state attorney general.

For your information we are including an updated map showing, geographically, the utilization of pharmaceutical agents by optometrists.

Note: Section 39, chapter 842, Oregon Laws 1977, is operative July 1, 1986, and provides:

Sec. 39. ORS 683.010, 683.020, 683.030, 683.035, 683.040, 683.050, 683.060, 683.070, 683.080, 683.100, 683.110, 683.120, 683.130, 683.140, 683.155, 683.170, 683.180, 683.190, 683.210, 683.250, 683.260, 683.270, 683.275, 683.280, 683.290 and 683.990 relating to optometrists are repealed.

GENERAL PROVISIONS

683.010 Definitions. As used in this chapter, unless the context requires otherwise:

(1) "Board" means the Oregon Board of Optometry.

(2) "Practice of optometry" means the employment of any means other than the use of drugs, except diagnostic agents, topically applied, known generically as cycloplegics, mydriatics, topical anesthetics, dyes such as fluorescein, and, for emergency use only, miotics, for the measurement or assistance of the powers or range of human vision or the determination of the accommodative and refractive states of the human eye or the scope of its functions in general or the adaptation of lenses or frames for the aid thereof, subject to the limitations of ORS 683.040.

(3) "Trial frames" or "test lenses" means any frame or lens used in testing the eye which is not sold and not for sale. [Amended by 1971 c.102 §1; 1975 c.175 §1]

683.020 Certificate of registration required to practice optometry. No person shall engage in the practice of optometry or display a sign or in any other way advertise or hold himself out as an optometrist without having first obtained a certificate of registration from the board as provided for in this chapter. In any prosecution for the violation of this section, the use of test cards, test lenses or of trial frames is prima facie evidence of the practice of optometry. [Amended by 1971 c.102 §2]

683.030 Persons and practices not affected. This chapter shall not be construed to prevent any person duly licensed to practice medicine and surgery from treating or fitting glasses to the human eye, nor to prohibit the sale of complete ready-to-wear eye glasses as merchandise from a permanent place of business in good faith and not in evasion of this chapter by any person not holding himself out as competent to examine and prescribe for the human eye.

683.035 Discrimination against optometrists prohibited. No official, board, commission or other agency of the state or of any of its political subdivisions or municipalities shall discriminate between duly licensed optometrists and any other person authorized by law to render professional services which a duly licensed optometrist may render, when such services are required. Such services shall be paid for in the same manner and under the same standards as similar professional services. [1963 c.121 §1]

LICENSING

683.040 Qualifications of applicants. (1) Every person desiring to commence the practice of optometry in this state must show by satisfactory evidence that he is of good moral character and has graduated from a school of optometry which is recognized and approved by the board and which maintains a standard of four school years of at least nine months each.

(2) Every person desiring to commence the practice of optometry after January 1, 1976, or employ the use of diagnostic agents shall in addition to the requirements of subsection (1) of this section have satisfactorily completed a course in pharmacology, as it applies to optometry, by an institution accredited by a regional or professional accreditation organization which is recognized or approved by the National Commission on Accrediting or the United States Commissioner of Education, with particular emphasis on the topical application of diagnostic agents to the eye for the purpose of examination of the human eye and the analysis of ocular functions, approved by the Oregon Board of Optometry. [Amended by 1971 c.102 §3; 1975 c.175 §2]

683.050 Persons licensed in another state. In lieu of the educational requirements of ORS 683.040, it shall be deemed equivalent if an applicant submits satisfactory proof to the board that he:

(1) Has passed an examination in optometry before a state board of examiners in another state of the United States and that the certificate granted in token thereof is then in force; and

(2) Was actually engaged in the practice of optometry in such state for the full period of three years subsequent thereto.

Rep Fischer

POSITION PAPER

COMMITTEE SUBSTITUTE FOR HOUSE BILL NO. 225 (HESS)

MAY 14 1983

"An Act relating to the practice of optometry and authorizing the use of certain drug by optometrists."

The Committee Substitute makes several changes to existing statute and to the original bill: (a) membership in the Board of Examiners in Optometry is expanded to six to include a physician licensed in the state; (b) duties of the board are broadened to include development, with the advice and guidance of the state medical board, of a list of prescription and non-prescription drugsand dosages which may be used in the practice of optometry in the state and requirements for continuing education of optometrists desiring to use drugs; (c) registration or licensure of an optometrist to practice beyond the scope of the individual's training is prohibited; and (d) language is added to require an optometrist to clarify the nature of his or her practice when using the prefix "Dr." or "Doctor".

The Department recommends that the board size remain an odd number by reducing the number of optometrist members to three while retaining the public member and the physician member.

There is a minor difference in the language of the original and committee substitute bills with regard to the types of drugs which would be permitted. The original version uses the adjective "legend" while the substitute refers to "legend", "prescription" and "non-prescription" drugs. It is assumed that "non-prescription" refers to commonly available over-the-counter preparations.

Both versions include in the definition of optometry the "diagnosis and treatment, including the use of drugs, of inflammations, infections, and injuries of the eyes and eyelids". This provision remains the most controversial element of the Bill although the provision for approval of the types of drugs by the optometric board with the advice and guidance of the medical board may reassure, to some extent, those concerned with the apparently unrestricted access to drugs permitted in the original version.

While the committee substitute is an improvement over the original version of the bill, the Department still considers the definition of optometry to be too broad, e.g., it would not prohibit the use of surgery nor the use of systemic drugs. At a minimum the inclusion of surgery within optometric practice should be prohibited and drug use should be limited to topical diagnostic preparations and anesthetics approved by the optometric board with the advice and guidance of the medical board.

POSITION PAPER/Department of Health and Social Services

While the vast majority of health care practitioners are prudent and sincere, the Department does not believe that individual practitioners should be left entirely free to define the scope of their practices. The Department does not believe a user of health services should have to rely solely on the professioal integrity of the provider for assurance of quality of care. This is one of the functions of the licensing statutes of the state.

The Department is opposed to the use of therapeutic drugs by optometrists. The possibilities of problems because of systemic effects, idiosyncratic or allergic reactions and drug interactions, while not common, require diagnostic and therapeutic responses which cannot be guaranteed though training courses in pharmacology.

Recommended by: E. S. Rabeau

E.S. Rabeau, M.D.
Director
Division of Public Health

Date: May 13, 1983

Approved by: _____

Robert London Smith, Ph.D.
Commissioner
Department of Health and
Social Services

Date: _____

STATE OF ALASKA
FISCAL NOTE Revision Date , 1983

I. REQUEST
Bill/Resolution No.: CSHB 225
Title: Practice of Optometry
Sponsor: Hurlbert and Martin
Requestor:

II. FISCAL DETAIL
Agency Affected: Health & Social Services
Program Category Affected: Public Health
BRU, Program of Subprogram(s) Affected:

EXPENDITURES/REVENUES: (Thousands of Dollars)

	FY 83	FY 84	FY 85	FY 86	FY 87	FY 88
OPERATING						
100 PERSONAL SERVICES						
200 TRAVEL						
300 CONTRACTUAL						
400 COMMODITIES						
500 EQUIPMENT						
600 LANDS & STRUCTURES						
700 GRANTS, CLAIMS, ETC.						
TOTAL OPERATING	0	0	0	0	0	0
CAPITAL	0	0	0	0	0	0
REVENUE	0	0	0	0	0	0

FUNDING: (Thousands of Dollars)

GENERAL FUND	0	0	0	0	0	0
FEDERAL FUNDS	0	0	0	0	0	0
OTHER (Specify Source)	0	0	0	0	0	0

POSITIONS:

FULL-TIME	0	0	0	0	0	0
PART-TIME	0	0	0	0	0	0
TEMPORARY	0	0	0	0	0	0

III. SOURCE OF FUNDS TO OFFSET FISCAL IMPACT OF BILL:

IV. ANALYSIS: Attach a separate page for any Analysis

Prepared By: Dean F. Tirador, M.D. Phone: 465-3090
Division: Public Health Date: 5/13/83

Approved by Commissioner: Date:
Department: Health and Social Services

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3/8/83

STAFF REPORT

HB 225, Relating to Prescription of
Drugs by Optometrists
April 25, 1983
Dave Palmer

HB 225 authorizes optometrists to use and prescribe legend drugs in diagnosis and treatment of conditions of the eyes and eyelids. It also requires the Board of Examiners in Optometry to provide for continuing education.

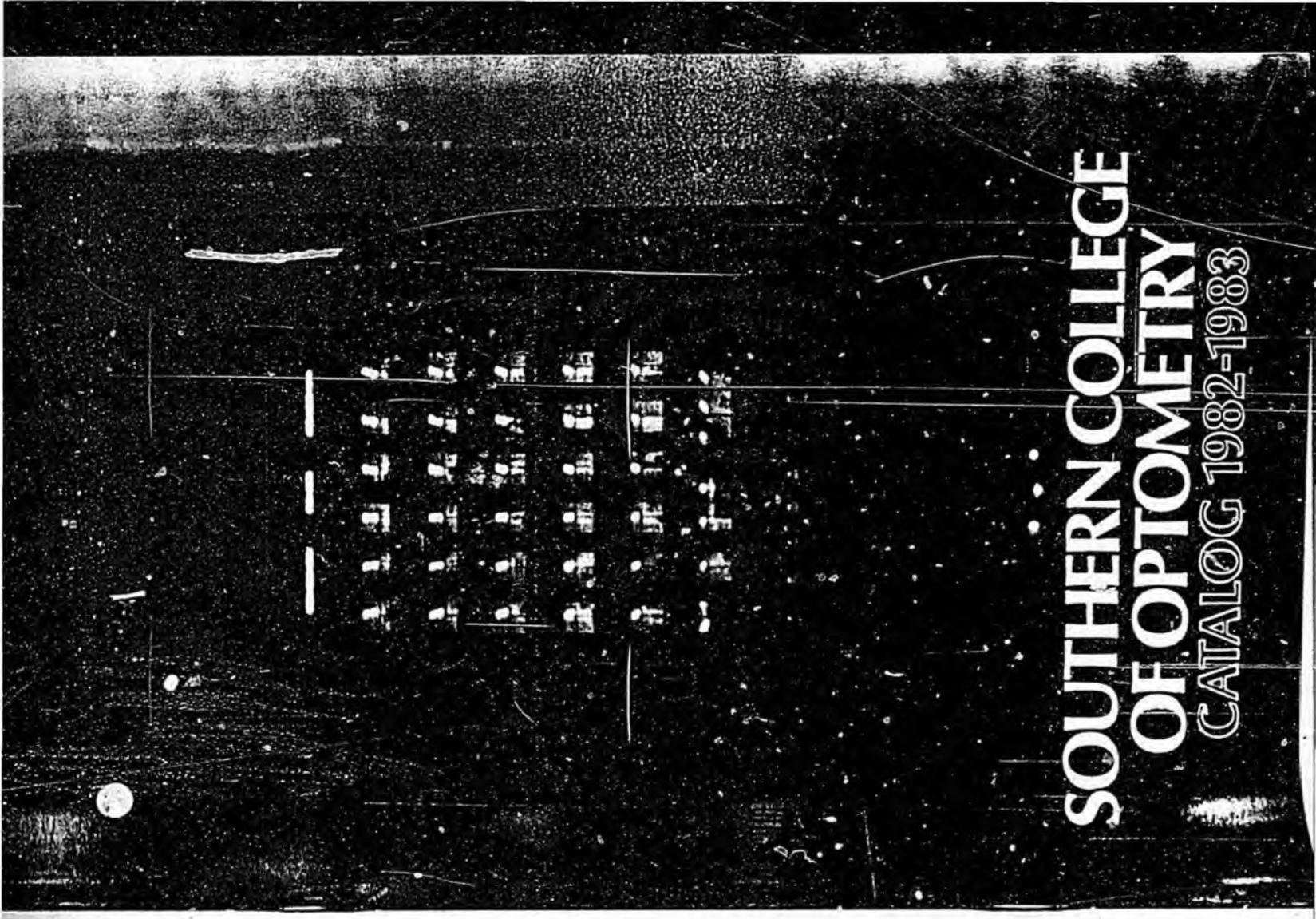
The bill authorizes the optometrist to use legend drugs for both diagnostic and treatment purposes. A majority of states authorize the use of legend drugs for diagnosis, but not for treatment. (See Oregon law attached).

The arguments in favor and in opposition of the bill are presented well in Dr. Rabeau's position paper. In a rural setting, particularly in Alaska where referrals to other professionals are difficult, the authorization to allow optometrists to expand their capabilities may carry more credence than in more populated states.

One method, proposed this session in Oregon, is to allow the use of drugs for treatment purposes by optometrists after they have received an endorsement by the Board of Examiners of Optometry and they are authorized to prescribe or use drugs or treatments that are approved jointly by the Board of Examiners in Optometry and by the Board of Medical Examiners.

The fiscal note from Commerce and Economic Development is $38,300 for FY 84.

The fiscal note from Department of Health and Social Services is zero.



SOUTHERN COLLEGE
OF OPTOMETRY
1245 MADISON AVENUE
MEMPHIS, TENNESSEE 38104

CORRESPONDENCE DIRECTORY

SOUTHERN COLLEGE OF OPTOMETRY
1245 Madison Avenue
Memphis, Tennessee 38104

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This edition of the Southern College of Optometry catalog is effective for the academic year 1982-83. Inasmuch as changes may be necessary from time to time, this catalog should not be construed as constituting a contract between the College and any person.

SOUTHERN COLLEGE OF OPTOMETRY

Memphis, Tennessee

1982-83 CATALOG

INFORMATION CURRENT AS OF JUNE, 1982

CURRICULUM

FIRST PROFESSIONAL YEAR			HOURS CREDIT	Clock Hours*
FALL QUARTER				
Biomedical	110	Human Anatomy & Physiology I: Structure & Function - 1 (5 HRS. LEC., 2 HRS. LAB)	6	70
Biomedical	111	Optics Applied To The Eye I (4 HRS. LEC., 2 HRS. LAB)	5	
Optometry	110	Introduction to Optometry (1 HRS. LEC., 3 HRS. LAB)	4	
Optometry	111	Preventive and Community Optometry Epidemiology & Research Methodology (4 HRS. LEC.)	4	
Clinic	110	Clinic Orientation (2 HRS. LAB.)	1*	
			Total 20	
WINTER QUARTER				
Biomedical	120	Human Anatomy & Physiology II: Structure & Function - 2 (5 HRS. LEC., 2 HRS. LAB)	6	70
Biomedical	121	Optics Applied To The Eye II (3 HRS. LEC., 2 HRS. LAB)	4	
Biomedical	122	Visual Perception: Psycho-Physiological Optics (4 HRS. LEC., 2 HRS. LAB)	5	
Optometry	120	Ophthalmic Diagnostic Principles I (3 HRS. LEC., 3 HRS. LAB)	4	
Optometry	121	Preventive & Community Optometry: Jurisprudence (2 HRS. LEC.)	2	
Clinic	110	Clinic Orientation (2 HRS. LAB)	*	
			Total 21	
SPRING QUARTER				
Biomedical	130	Human Anatomy & Physiology III: Structure & Function - 3 (5 HRS. LEC., 2 HRS. LAB)	6	70
Biomedical	131	Optics Applied To The Eye III (3 HRS. LEC., 2 HRS. LAB)	4	
Biomedical	133	Vegetative Physiology: Ocular Biochemistry (2 HRS. LEC., 2 HRS. LAB)	3	40
Optometry	130	Ophthalmic Diagnostic Principles II (4 HRS. LEC., 3 HRS. LAB)	5	
Optometry	131	History of Optometry (1 HR. LEC.)	1	
Clinic	110	Clinic Orientation (2 HRS. LAB)	*	
			Total 19	

*Note: One quarter hour credit is awarded upon completion of this course in the Spring Quarter

*Clock hours = hrs per week x 10 wk. quarter

SECOND PROFESSIONAL YEAR

				HOURS CREDIT	Clock Hours
FALL QUARTER					
Biomedical	210	Principles of Medicine I: General Pathology (5 HRS. LEC.)		5	50
Biomedical	211	Physiological Optics: Eye As An Optical System (3 HRS. LEC., 2 HRS. LAB)		4	
Biomedical	212	Neuroanatomy and Neurophysiology (3 HRS. LEC., 2 HRS. LAB)		4	50
Biomedical	213	Principles of Pharmacology & Therapeutics I (2 HRS. LEC.)		2	20
Optometry	210	Advanced Optometry I (3 HRS. LEC., 2 HRS. LAB)		4	
Clinic	210	Clinical Procedures (2 HRS. LAB)		1*	
				Total 20	
WINTER QUARTER					
Biomedical	220	Principles of Medicine II: Ophthalmic Pathology I (5 HRS. LEC., 2 HRS. LAB)		6	70
Biomedical	221	Physiological Optics II: Monocular Sensory (3 HRS. LEC., 2 HRS. LAB)		4	50
Biomedical	223	Principles of Pharmacology & Therapeutics II (4 HRS. LEC.)		4	40
Optometry	220	Advanced Optometry II (3 HRS. LEC., 2 HRS. LAB)		4	
Optometry	222	Ophthalmic Optics I (2 HRS. LEC.)		2	
Clinic	210	Clinical Procedures (2 HRS. LAB)		*	
				Total 20	
SPRING QUARTER					
Biomedical	230	Principles of Medicine III: Ophthalmic Pathology II (5 HRS. LEC., 2 HRS. LAB)		6	70
Biomedical	231	Physiological Optics III: Monocular Sensory & Binocular Vision (2 HRS. LEC., 2 HRS. LAB)		3	40
Biomedical	233	Principles of Pharmacology & Therapeutics III (4 HRS. LEC.)		4	40
Optometry	230	Advanced Optometry III (4 HRS. LEC., 2 HRS. LAB)		5	
Optometry	232	Ophthalmic Optics II (1 HR. LEC., 2 HRS. LAB)		2	
Clinic	210	Clinical Procedures (2 HRS. LAB)		*	
				Total 20	

*Note: One quarter hour credit is awarded upon completion of this course in the Spring Quarter.

THIRD PROFESSIONAL YEAR

				HOURS CREDIT	Clock Hours
FALL QUARTER					
Biomedical	310	Principles of Medicine IV: Pediatrics and Pediatric Optometry (2 HRS. LEC., 2 HRS. LAB)		3	40
Biomedical	311	Principles of Medicine V: Neurology (2 HRS. LEC.)		2	20
Biomedical	312	Principles of Medicine VI: Neuro-ophthalmic Disorders (3 HRS. LEC., 2 HRS. LAB)		4	50
Biomedical	313	Principles of Pharmacology & Therapeutics IV (2 HRS. LEC.)		2	20
Optometry	310	Contact Lens Practice: I (3 HRS. LEC., 2 HRS. LAB)		4	
Optometry	311	Orthoptics & Vision Therapy I (3 HRS. LEC., 2 HRS. LAB)		4	
Clinic	310	Clinical Practice I (1 HR. LEC., 8 HRS. LAB)		3	
				Total 22	
WINTER QUARTER					
Biomedical	320	Principles of Medicine VII: Gerontology & Geriatrics (3 HRS. LEC.)		3	
Biomedical	322	Principles of Medicine VIII: Dermatology (2 HRS. LEC.)		2	20
Biomedical	323	Principles of Pharmacology & Therapeutics V (3 HRS. LEC., 2 HRS. LAB)		4	50
Optometry	320	Contact Lens Practice II (3 HRS. LEC., 2 HRS. LAB)		4	
Optometry	321	Orthoptics & Vision Therapy II (3 HRS. LEC., 2 HRS. LAB)		4	
Clinic	320	Clinical Practice II (1 HR. LEC., 8 HRS. LAB)		3	
				Total 20	
SPRING QUARTER					
Biomedical	333	Principles of Pharmacology & Therapeutics VI (3 HRS. LEC., 2 HRS. LAB)		4	50
Optometry	331	Preventive & Community Optometry: Environmental Vision (3 HRS. LEC.)		3	
Optometry	332	Preventive & Community Optometry: Public Health (2 HRS. LEC.)		2	
Optometry	333	Limited Vision (Partial Sight) (3 HRS. LEC., 2 HRS. LAB)		4	
Optometry	334	Preventive & Community Optometry: Economics and Practice Management (3 HRS. LEC.)		3	
Clinic	330	Clinical Practice III (1 HR. LEC., 12 HRS. LAB)		4	
Clinic	331	Contact Lens Clinic (4 HRS. LAB)		1	
Clinic	332	Orthoptics and Vision Therapy Clinic (4 HRS. LAB)		1	
				Total 22	

FOURTH PROFESSIONAL YEAR

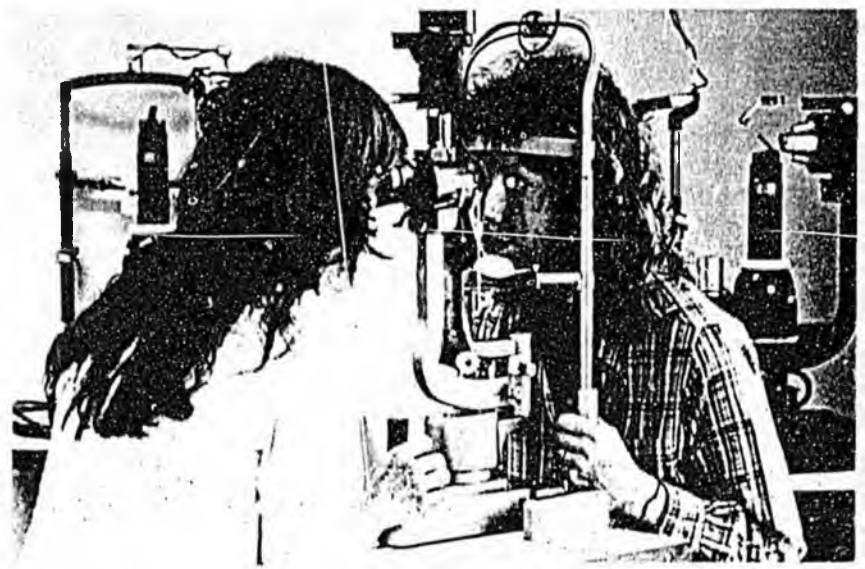
A twelve-week externship is required during the fourth year. Externship information appears under COURSE DESCRIPTIONS (Clinic Department) in this catalog.

			HOURS CREDIT
SUMMER QUARTER			
Optometry	400	Optometry Seminar	2
Optometry	401	Clinical Case Analysis I (2 HRS. LEC.)	2
Clinic	400	Clinical Practice IV (1 HR. LEC., 20 HRS. LAB)	6
Clinic	401	Contact Lens Clinic (4 HRS. LAB)	1
Clinic	402	Orthoptics and Vision Therapy Clinic (4 HRS. LAB)	1
		OR	Total 12
Clinic	405	Externship	12
FALL QUARTER			
Optometry	410	Optometry Seminar (2 HRS. LEC.)	2
Optometry	411	Clinical Case Analysis II (3 HRS. LEC.)	3
Clinic	410	General Clinic Practice V (1 HR. LEC., 16 HRS. LAB)	5
Clinic	411	Contact Lens Clinic (4 HRS. LAB)	1
Clinic	412	Orthoptics and Vision Therapy Clinic (4 HRS. LAB)	1
		OR	Total 12
Clinic	415	Externship	12
WINTER QUARTER			
Optometry	420	Optometry Seminar (2 HRS. LEC.)	2
Optometry	421	Clinical Case Analysis III (2 HRS. LEC.)	2
Clinic	420	General Clinic Practice VI (1 HR. LEC., 20 HRS. LAB)	6
Clinic	421	Contact Lens Clinic (4 HRS. LAB)	1
Clinic	422	Orthoptics and Vision Therapy Clinic (4 HRS. LAB)	1
		OR	Total 12
Clinic	425	Externship	12

• Total basic science clock hours = 730

SPRING QUARTER

Optometry	430	Optometry Seminar (2 HRS. LEC.)	
Optometry	431	Clinical Case Analysis IV (3 HRS. LEC.)	
Clinic	430	General Clinic Practice VII (1 HR. LEC., 24 HRS. LAB)	
		OR	Total 1
Clinic	435	Externship	1



...ved by the board and embodied in the board's certificate or order of revocation or suspension.

18.54.110 Suspension or revocation of license for unprofessional conduct—Judicial review. Any person whose license has been revoked or suspended may seek judicial review of the board's action or decision under the provisions of chapter 34.04 RCW as amended from time to time.

18.54.120 Reinstatement. Any person whose license has been revoked or suspended may apply to the board for reinstatement at any time; and the board may hold hearings on such petition, may impose such terms or conditions as are appropriate under the circumstances, and may order a reinstatement.

9.04 False advertising.

69.32 Narcotics.

18.54.150 Powers previously vested in director of licenses under RCW 18.53.100 now vested in optometry board.

70.96A Uniform alcoholism and intoxication treatment act.

West Virginia Optometry Law

30-8-1. EVIDENCE OF QUALIFICATION TO PRACTICE AND REGISTRATION REQUIRED.—Any person practicing or offering to practice optometry in this State shall be required to submit evidence that he is qualified so to practice, and shall be registered as hereinafter provided, and it shall be unlawful for any person to practice or offer to practice optometry in this State, except under the provisions of this article.

30-8-2. PRACTICE OF OPTOMETRY DEFINED.—Any one or any combination of the following practices shall constitute the practice of optometry:

(a) The examination of the human eye, with or without the use of drugs, prescribable for the human eye, which drugs may be used for diagnostic or therapeutic purposes for topical application to the anterior segment of the human eye only, and, by any method other than surgery, to diagnose, to treat or to refer for consultation or treatment any abnormal condition of the human eye or its appendages;

(b) The employment without the use of surgery of any instrument, device, method or diagnostic or therapeutic drug for topical application to the anterior segment of the human eye intended for the purpose of investigating, examining, treating, diagnosing, improving or correcting any visual defect or abnormal condition of the human eye or its appendages;

(c) The prescribing and application or the replacement or duplication of lenses, prisms, contact lenses, orthoptics, vision training, vision rehabilitation, diagnostic or therapeutic drugs for topical application to the anterior segment of the human eye, or the furnishing or providing of any prosthetic device, or any other method other than surgery necessary to correct or relieve any defects or abnormal conditions of the human eye or its appendages.

Nothing in this section shall be construed to permit an optometrist to perform surgery, use drugs by injection or to use or prescribe any drug for other than the specific purposes authorized by this section.

30-8-3. BOARD OF OPTOMETRY, DUTIES.

30-8-3a. REGISTRATION OF OPTOMETRIC CORPORATIONS.

30-8-3b. PRACTICE OF OPTOMETRY BY OPTOMETRIC CORPORATIONS.

30-8-4. REGISTRATION PREREQUISITE TO PRACTICE OF OPTOMETRY; EXCEPTIONS.—No person shall practice or offer to practice optometry in this State without first applying for and obtaining a certificate of registration for such purpose from the West Virginia Board of Optometry; but the following persons, firms and corporations are exempt from the operation of this article, except as hereinafter provided:

(a) Persons who have heretofore been registered as optometrists in this State, or who were engaged in the practice of optometry in this State before the passage of any law by this State regulating such practice, and who have heretofore received from the Board of examiners certificates of exemption from examination;

(b) Persons authorized under the laws of this State to practice medicine and surgery or osteopathy;

(c) Persons, firms and corporations who sell eye glasses or spectacles in a store, shop or other permanently established place of business on prescriptions from persons authorized under the laws of this State to practice either optometry or medicine and surgery;

(d) Persons, firms and corporations who manufacture or deal in eye glasses or spectacles in a store, shop or other permanently established place of business, and who neither practice nor attempt to practice optometry.

30-8-5. QUALIFICATIONS OF APPLICANT FOR REGISTRATION, EXAMINATION.—An applicant for registration shall present satisfactory evidence that he is at least eighteen years of age, of good moral character and temperate habits, and has graduated from a high school or secondary school, or has completed an equivalent course of study approved by the West Virginia board of optometry, has satisfactorily completed all preoptometry or premedical college requirements and has graduated from a school or college of optometry approved by said board. No school or college of optometry shall be approved by the West Virginia board of optometry unless at first it has been accredited by a regional or professional accreditation organization which is recognized by the national commission on accreditation or the United States commission of education. Each applicant shall submit to and be examined in all phases of optometry as is provided by the school or college of optometry and shall include, but not be limited to, anatomy and physiology of the human eye, the use of instruments such as the ophthalmoscope, retinoscope, tonometer, slit lamp biomicroscope, the general laws of optics and refraction, general and ocular pharmacology, general and ocular pathology and other such subjects or instrumentation as the board of optometry may deem necessary.

The West Virginia board of optometry shall be responsible to determine the educational training received by the applicant from the schools and colleges of optometry, the educational qualifications of each applicant and the administering of the examination and certifications of each applicant commensurate with his education. No optometrist shall be registered or certified to practice optometry in the state of West Virginia in any area that is beyond the scope of his educational training as determined by the West Virginia board of optometry: Provided, That any optometrist presently registered in the state of West Virginia and who desires to employ the use of pharmaceutical agents must submit to the West Virginia board of optometry evidence of satisfactory completion of all necessary educational requirements as made mandatory by the West Virginia board of optometry: Provided further, That the West Virginia board of optometry shall provide for continuing educational requirements to be completed from time to time by all optometrists desiring to employ the use of pharmaceutical agents.

30-8-6. CERTIFICATE OF REGISTRATION OR EXEMPTION SHALL BE DISPLAYED; BILL OF PURCHASE. Every person practicing optometry shall display his certificate of registration or exemption in a conspicuous place in the principal office wherein he practices optometry, and, whenever required, shall exhibit such certificate to the board of examiners or its authorized representatives. And whenever practicing the profession of optometry outside of or away from said office or place of business, he shall deliver to each customer or person so fitted with glasses a bill of purchase which shall contain his signature, home post-office address, and the number of his certificate of registration or exemption, together with a specification of the lenses furnished.

30-8-7. ANNUAL RENEWAL OF REGISTRATION; RESTORATION OF EXPIRED CERTIFICATE. Every registered optometrist who desires to continue in active practice or service shall, annually, on or before the first day of August, of each year, renew his certificate of registration, and pay an annual renewal fee of twenty dollars. Every certificate of registration which has not been renewed during the month of August in any one year shall expire on the first day of September of that year. A registered optometrist whose certificate of registration has expired may have the same restored only upon payment of the required renewal fee. Any registered optometrist who retires from the practice of optometry for more than five years may renew his certificate of registration upon payment of all lapsed renewal fees.

30-8-8. REFUSAL TO ISSUE, SUSPENSION OR REVOCATION OF CERTIFICATE; FALSE AND DECEPTIVE ADVERTISING. The Board may either refuse to issue, or may refuse to renew, or may suspend or revoke any certificate of registration for any one, or any combination, of the following causes: Violation of a rule or regulation governing the ethical practice of optometry promulgated by the Board under the authority granted by this article; conviction of a felony, as shown by a certified copy of the record of the court wherein such conviction was had; the obtaining of, or the attempt to obtain, a certificate of registration, or practice in the profession of optometry, for money, or any other thing of value, by fraudulent misrepresentation; gross malpractice; continued practice by a person knowingly having an infectious disease; habitual drunkenness, or addiction to the use of morphine, cocaine, or other habit-forming drugs; advertising, practicing, or attempting to practice under a name other than one's own; advertising by means of knowingly false or deceptive statements. All advertising, whether by means of newspapers, or in any manner, whatsoever, of the following statements, or statements of similar import, that are "false and deceptive" within the meaning of this law, shall be prohibited. False and deceptive advertising shall include but not be limited to the following: (a) Advertising of complete glasses, that is to say, lenses and frames or mountings, at a stated price, either alone or in conjunction with professional services; (b) advertising "free examination of eyes", or "free consultation", or "free advice", or words of similar import and meaning; (c) advertising frames or mountings for glasses, by advertisement which does not accurately describe the same in all its component parts (all such advertisements shall state clearly, in type equal in size to the price figures given, that such price does not include cost of lenses, or professional services in examining of eyes), and, (d) advertising a particular sum or sums of money required as a "down" or cash payment, or any definite amount or amounts of future payments, or when the same shall be paid.

30-8-9. OFFENSES; PENALTIES; JURISDICTION OF JUSTICES. Each of the following shall constitute a misdemeanor punishable, upon conviction, for the first offense, by a fine of not less than one hundred nor more than two hundred dollars, and, upon conviction for a second or subsequent offense, by a fine not less than two hundred nor more than five hundred dollars, or by imprisonment for not less than thirty nor more than ninety days, or by both such fine and imprisonment, at the discretion of the court. The practice of, or an attempt to practice optometry, without a certificate of registration as a registered optometrist, except as hereinbefore provided; permitting any person in one's employ, supervision or control, to practice optometry, unless such a person has a certificate of registration as a registered optometrist when such certificate is required by this article; the obtaining of, or an attempt to obtain, a certificate of registration, or practice in the profession, or money, or anything of value, by fraudulent misrepresentation; the making of any willfully false oath or affirmation, whenever an oath or affirmation is required by this article; the violation of the provisions of section six of this article.

Justices of the peace shall have concurrent jurisdiction with circuit and criminal courts for the enforcement of this article.

30-8-10. UNLAWFUL PRACTICE OF OPTOMETRY; PENALTIES.—Any corporation or voluntary association shall not practice, or assume to practice, or in any manner to hold itself out to the public as being entitled to practice the profession of optometry, or advertise the title of optometrist in such a manner as to convey the impression to the public that it is entitled to practice optometry, or furnish optometric advice and services, or advertise that, either alone or together with or by or through any person, whether a duly registered and licensed optometrist or not, it has, owns, conducts or maintains an office or place for practice of optometry. Any duly registered and licensed optometrist shall not associate himself with any corporation or voluntary association for the practice of optometry, or in any manner practice such profession, on a salary or commission basis, for any such corporation or voluntary association. Any corporation or voluntary association violating any of the provisions of this section, or any officer, trustee, director, agent or employee of such corporation or voluntary association who, either directly or indirectly, engages in any of the acts, shall be guilty of a misdemeanor and upon conviction thereof shall be fined not less than one hundred nor more than one thousand dollars. The fact that any such officer, trustee, director, agent or employee shall be a duly registered and licensed optometrist shall not be held to permit or allow any such corporation or voluntary association to do the acts prohibited herein, nor shall such fact be a defense upon the trial of any of the persons hereinbefore mentioned for a violation of this section. Any duly registered and licensed optometrist who shall violate the provisions of this section shall be guilty of a misdemeanor, and upon conviction thereof shall be fined not less than ten dollars nor more than twenty-five dollars, and each and every day such violation continues shall constitute a separate offense; and in addition to the foregoing penalties, such offending optometrist shall have his license to practice suspended for a period of one year, by the court in which such conviction is had. Provided that this section shall not apply to a partnership of two or more duly registered and licensed optometrists who practice under their own names.

It shall be unlawful for any registered optometrist to practice his profession as an employee, lessee, or sub-lessee of any commercial or mercantile establishment or to practice his profession in connection therewith, or to advertise either in person or through any commercial or merchantile establishment that he is a duly registered practitioner, and is practicing or will practice optometry as an employee, lessee, or sub-lessee of any such commercial or mercantile establishment or in connection therewith. But nothing herein shall be construed to prohibit or prevent the rendering of professional services to the officers and employees of any person, firm or corporation by an optometrist, whether or not the compensation for such services is paid by the officers and employees, or by the employer, or jointly by all or any of them. Any person violating this provision shall be guilty of a misdemeanor, and, upon conviction thereof shall be fined not less than fifty nor more than five hundred dollars, and each and every day such violation continues shall constitute a separate offense.

Wisconsin Optometry Law

Optometry

449.01 (1) Optometry. (a) (1) The practice of optometry is defined as follows: The employment of any means including topical ocular diagnostic pharmaceutical agents under S. 449.17, to determine the visual efficiency of human visual system, including refractive and functional abilities or preliminarily diagnose the presence of ocular disease or ocular manifestations of systematic disease and other departures from normal.

(2) The diagnosis and treatment of the refractive and functional ability of the visual system and enhancement of visual performance by prescribing, furnishing, fitting or employing ophthalmic lenses, con-

ALASKA COURSE SCHEDULE #750B2 OCULAR THERAPY FOR THE OPTOMETRIC PRACTITIONER

WEEKEND #	TIMES & DATES	LOCATION	COURSE CURRICULUM	FACULTY	HOURS LECTURE	HOURS CLINIC	COMMENTS
1	Fri.3/5/82 -9a.-4p. Sat.3/6/82 -9a.-4p. Sun.3/7/82 -9a.-4p. Mon.3/8/82 -9a.-4p.	ANCHORAGE ~~JUNEAU,~~ ALASKA	Principles of Pharmacology Autonomic Drugs Ocular Diagnostic Pharmaceuticals CPR and Emergency Care	Ph.D. Pharmacologist " " " " Alaska, American Heart Ass'n	6 6 6	6	AHA Cert. and/or Re-certification required
2	Fri.3/26/82-7p.-9p. Sat.3/27/82-9a.-4p. Sun.3/28/82-9a.-4p.	ANCHORAGE ~~PORTLAND,~~ ~~OREGON~~ ALASKA	OPA Examination The Pharmacology of Ocular Therapy (Part I) " " " " " (Part II)	PCO Proctor Ph.D. Pharmacologist " "	2 6 6		
3	Fri.4/23/82-9a.-4p. Sat.4/24/82-9a.-4p. Sun.4/25/82-9a.-4p.	ANCHORAGE ~~FAIRBANKS,~~ ALASKA	Systemic Diseases (and Ocular Manifestations) Applied Pharmacology Anterior Segment Eye Disease (Part I)	M.D. (Internist) Pharm.D. O.D.	6 6 6		
4	Fri.5/21/82-8a.-9a. " " " " 9a.-4p. Sat.5/22/82-8a.-9a. " " " " 9a.-4p. Sun.5/23/82-9a.-5p.	ANCHORAGE, ALASKA	Midterm Examination (Part I) Anterior Segment Eye Disease (Part II) Midterm Examination (Part II) Anterior Segment Eye Disease (Part III) Anterior Segment Clinic, Day #1	PCO Proctor O.D. PCO Proctor M.D. (Ophthalmologist) M.D. (Ophthal.) & O.D.	1 6 1 6	7	10-1 Ratio
5	Fri.6/25/82-9a.-4p. Sat.6/26/82-9a.-4p. Sun.6/27/72-8a.-5p.	ANCHORAGE ~~PORTLAND,~~ ~~OREGON~~ ALASKA	Glaucoma (Part I) " (Parts II & III) " Clinic	O.D., Ph.D.(Anatomist) M.D., (Ophthalmologist) O.D. Staff & M.D.(Ophth'l)	6 6	8	8-1 Ratio
6	Fri.9/10/82-9a.-4p. Sat.9/11/82-9a.-4p. Sun.9/12/82-8a.-5p.	ANCHORAGE, ALASKA	Diagnosis & Management of Advanced Eye Diseases Anterior Segment Eye Disease (Part IV) " " " " Clinic, Day #2	M.D. (Ophthalmologist) O.D. O.D. Staff	6 6	8	10-1 Ratio
7	Sun.10/24/82-9a.-12p	ANCHORAGE, etc. JUNEAU, ALASKA	FINAL EXAMINATION	State Board Proctor	3		
7	20 DAYS	4 SITES	TOTALS	21 { 4 Ph.D.'s, 4 M.D.'s, 3 O.D.'s }	91	29	

offered by *Pacific University*
Diane P. Yolton, Ph.D.
Jimmy Bartlett, O.D.
Roland Manthei, Ph.D.
March 27-28-29 UAA
April 24-25-26 UAA

PATHOPHYSIOLOGY AND PHARMACOLOGY: principles of pharmacology, clinical application of ocular pharmacology and ocular toxicology. Pathophysiology of ocular allergy, infection and inflammation. Pharmacologic considerations in ocular steriod therapy, and in glaucoma therapy.

offered by *Pennsylvania College*
Philip Gerbino, Pharm.D.
Mack Lipken, Jr., M.D.
May 1-2 UAA

APPLIED PHARMACOLOGY: administration of drugs, Rx writing, patient management.
SYSTEMIC DISEASE: systemic disease related to ocular disease. Allergic-immunology; cardiovascular-cerebrovascular; endocrine; hematological; infectious and inflammatory; metabolic-chromosomal; musculoskeletal; mucocutaneous-dermatological; neurological nutritional-gastrointestinal

offered by *Pennsylvania College*
Louis Catania, O.D.
Linda Casser, O.D.
May 22-23-24 UAA

ANTERIOR SEGMENT DISEASE: corneal dystrophies, degenerations, infections, inflammations, irritations, injuries. Differential diagnosis, systemic considerations, treatment/management of anterior uveitis. Eyelid/adnexa disorders. Disorders of the lacrimal system, conjunctiva, sclera, and episclera.

offered by *Pacific University*
Tom Lewis, O.D., Ph.D.
Ronald Reed, M.D.
....and clinical staff
June 11-12-13 UAA and clinics

GLAUCOMA: anatomy-pathophysiology review. Epidemiology-risk factors. Examination, differential diagnosis, clinical classification. Medical management, surgical considerations. Concepts and controversies in glaucoma care. Methods of examination and clinical procedures.

offered by *Pennsylvania College*
Theodore Buckner, M.D.
....and clinical staff
September 10-11-12 clinics

ANTERIOR SEGMENT DISEASE CLINIC: examination protocols, techniques in dilitation and irrigation, gland expressing, epilation, cyst drainage, scrapings, cultures, cytology. Foreign body removal. Management of lacerations and corneal abrasions. Techniques for diagnosing systemic disease; exophthalmometry, ophthalmodynamometry. Clinical procedures

REGISTRATION FORM

Advance registration of $100 is required and due by February 24, 1982. Please complete the form below and return with payment to: Alaska Optometric Association, 3401 Denali Street, Suite 204, Anchorage, Alaska 99503

Tuition: $1,550

Payments and Due Dates

$100	February 24, 1982
400	March 17, 1982
400	April 17, 1982
400	May 17, 1982
250	September 1, 1982

NAME _____

ADDRESS _____

City _____ State/Zip _____

I will need the following required textbooks:

_____ Goodman and Gilman, The Pharmacological Basis of Therapeutics $45.00

_____ Fraunfelder & Roy, Current Ocular Therapy $43.00

_____ Deborah Pavon-Langston, Manual of Ocular Diagnosis & Therapy $15.00

FACULTY

Jimmy Bartlett, O.D.
Associate Professor, Director of Continuing Education University of Alabama in Birmingham School of Optometry/ The Medical Center

Theodore Buckner, M.D.
Board Certified Ophthalmologist, Wills Eye Hospital, Philadelphia, Attending Surgeon, Shore Memorial Hospital, Somers Point, New Jersey

Linda C. Casser, O.D.
Assistant Professor, Pennsylvania College of Optometry, Chief, Primary Care Module No. 4, The Eye Institute, Pennsylvania College of Optometry, Philadelphia

Louis J. Catania, O.D.
Director, Center for Continuing and Post-Graduate Education Pennsylvania College of Optometry, Philadelphia; Past Director, Primary Care Optometry Residency Program of the Joseph C. Wilson Health Care Center Medical Group, Rochester, New York

Philip Gerbino, Pharm.D.
Associate Professor of Clinical Pharmacy, Philadelphia College of Pharmacy and Science; Former Director of Drug Information Center of Cornell University

Thomas L. Lewis, O.D., Ph.D.
Doctorate in Anatomy, Jefferson Medical College; Dean of Academic Affairs and Associate Professor, Pennsylvania College of Optometry

Mack Lipkin, Jr., M.D., F.A.C.P.
Graduate of Harvard Medical School; Board Certified in Internal Medicine; Assistant Professor of Medicine, University of Rochester School of Medicine, Rochester, New York

Roland W. Manthei, Ph.D.
Doctorate in Pharmacology, University of Chicago; Professor of Pharmacology, Jefferson Medical College, Philadelphia

Ronald R. Reed, M.D.
Board Certified from Wills Eye Hospital; Adjunct Assistant Clinical Professor, University of Rochester, School of Medicine Strang Memorial Hospital, Department of Ophthalmology

Diane Yolton, Ph.D.
Assistant Professor of Anatomy and Pathology, Pacific University College of Optometry.

Clinical Faculty will include experienced clinicians including optometrists and ophthalmologists from various universities and V.A. medical centers in the United States.

Sponsored by Alaska Optometric Association

in cooperation with....

PACIFIC UNIVERSITY COLLEGE OF OPTOMETRY,
PENNSYLVANIA COLLEGE OF OPTOMETRY, and
UNIVERSITY OF ALASKA ANCHORAGE

Pathophysiology & Pharmacology
D. Yolton, Ph.D. - J. Bartlett, O.D. - R. Manthei, Ph.D.
March 27-28-29 April 24-25-26 UAA

Applied Pharmacology & Systemic Disease
P. Gerbino, Pharm.D. - M. Lipkin, M.D.
May 1-2 UAA

CPR & Emergency Care
American Red Cross Instructors
May 3 UAA

Anterior Segment Disease: cornea, uvea, lids conjunctiva, lacrimal system
L. Catania, O.D. - L. Casser, O.D.
May 22-23-24 UAA

Glaucoma
T. Lewis, O.D., Ph.D. - R. Reed, M.D. - clinical staff
June 11-12-13 UAA and selected clinical facilities

Anterior Segment: Clinical Procedures
T. Buckner, M.D. - L. Catania, O.D. - clinical staff
September 10-11-12 Selected Clinical Facilities

Final Examination
October 16 University of Alaska Campuses

Announcing

DIAGNOSIS, MANAGEMENT, AND TREATMENT OF OCULAR DISEASE

.... an in-depth postgraduate course including 120 hours of instruction with emphasis on diagnosis, treatment, and ocular therapeutics; and, recognition of ocular manifestations of systemic disease....

Oregon Health Sciences Center - School of Dentistry

Curriculum Leading to the Degree Doctor of Dental Medicine (DMD) 1978-9

(Typed from microfiche)

FIRST YEAR

Fall Interval

			Clock Hours Lec	Conf	Lab	Clinic	Total	Credit Hours
An	411-2	General Histology	16		32		48	-
An	411-2	Gross Anatomy	29		40		60	-
BCh	411	Biochemistry	40				40	4.0
BeS	411	Omnibus	17				17	1.7
CJT	411	Prevention of Dental Diseases	12		17		29	2.1
DA	411-12	Dental Anatomy Lect	12				12	-
DA	411-12	Dental Anatomy Lab			24		24	-
DM	410-20	Dental Materials	4		9		13	-
FP	411	Fixed Prosthodontics Technic			36		36	1.2
Mb	411	Microbiology	12		12		24	1.7
OD	411	Oral Examination Technic	14		9		23	1.7
Phy	411	Physiology	31	4	5		40	3.5

Winter Interval

			Clock Hours Lec	Conf	Lab	Clinic	Total	Credit Hours
An	411-2	General Histology	3		6		9	3.8
An	411-2	Gross Anatomy	8		16		24	5.6
An	412	Head and Neck Anatomy	22		32		54	3.8
BCh	412-3	Biochemistry	31				31	-
DA	411-2	Dental Anatomy Lect	4				4	1.6
DA	411-2	Dental Anatomy Lab			8		8	1.6
DM	410-20	Dental Materials	4		9		13	-
FP	412	Fixed Prosthodontic Technic			63		63	2.1
Per	412	Periodontics Technic	5		21		26	1.5
Phy	412	Physiology	34	4	4		42	3.8

Spring Interval

			Clock Hours Lec	Conf	Lab	Clinic	Total	Credit Hours
An	413	Neuroanatomy	12		24		36	2.4
An	413	Oral Histology	12		24		36	2.4
BCh	412-3	Biochemistry	17				17	4.8
CJT	413	Biology of Inflammation	16				16	1.6
DM	410-20	Dental Materials	3		9		12	-
FP	413	Fixed Prosthodontics Technic			36		36	1.2
Op	413	Operative Technic Lecture	22				22	2.2
Op	413	Operative Technic Lab			66		66	2.2
Per	613	Periodontics Clinic				15	15	0.5
Phy	413	Physiology	35	4	3		42	3.8
		First Year Total						62.8

SECOND YEAR

Fall Interval

			Clock Hours Lec	Conf	Lab	Clinic	Total	Credit Hours
BeS	421	Personal Adjustment		10			10	1.0
DM	410-20	Dental Materials	3				3	-
FP	421	Fixed Prosthodontics Technic			72		72	2.4
Mb	421	Immunology	25				25	2.5
Op	421	Operative Technic Lecture	11				11	1.1
Op	421	Operative Technic Lab			66		66	2.2
Per	421	Periodontology	12				12	1.2
Per	620	Periodontics Clinic				33	33	-

			Clock Hours Lec	Conf	Lab	Clinic	Total	Credit Hours
PH	421-2	Dentistry & The Health Care System	11				11	-
Phc	421-2	Pharmacodynamics	53		15		68	-
Pth	421-2	Disease Processes	14	31			45	-
RP	421	Removable Prostho-dontics Technic	11		33		44	2.2
Winter Interval								
BeS	422	History of Dentistry	10				10	1.0
CJT	422	Caries	21		7		28	2.5
DM	410-20	Dental Materials	3				3	-
FP	422	Fixed Prosthodontics Technic			33		33	1.1
Mb	422	Pathogenic & Oral Microbiology	26		11		37	2.9
Med	422	Medical Emergency Procedures	8		4		12	1.0
OD	420-30	Oral Diagnisis & Treatment	6				6	-
Op	422	Operative Technic	11				11	1.1
Op	422	Operative Technic Laboratory			33		33	1.1
OS	422-3	Control of Pain & Anxiety	20		6		26	2.6
OS	422	Introduction to Oral Surgery	11				11	1.1
Pedo	422	Child Development	22				22	2.2
Per	620	Periodontics Clinic				15	15	-
PH	421-2	Dentistry & the Health Care System	11				11	2.2
Phc	421-2	Pharmacodynamics	7				7	6.5
Pth	421-2	Disease Processes	4				4	3.5
Pth	422	Inflammatory Disease	18				18	1.8
Ro	422	Oral Radiology	11				11	1.1
RP	422	Removable Prostho-dontics Technic	8		24		32	1.6
Spring Interval								
DM	410-20	Dental Materials	5				5	3.1
Endo	423	Endodontology	11		24		35	2.2
FP	423	Fixed Prosthodon-tics Technic			69		69	2.3
Nu	423	Nutrition	14			1	15	-
Op	623	Operatives Clinic				33	33	0
Ord	423	Orthodontics	9				9	0.9
Ord	423	Orthodontics Technic			27		27	0.9
OS	423	Oral Surgery			12		12	0.6
Pedo	423	Child Development	11				11	1.1
Pedo	423	Pedodontic Technic				44	44	1.1
Per	620	Periodontics Clinic				15	15	2.1
Pth	423	Pathology of Systems	34	24			58	4.6
Ro	423	Oral Radiology Laboratory			15		15	0.5
RP	423	Removable Prostho-dontics Technic		4	33		37	1.5
						Second Year Total		68.2

THIRD YEAR

			Clock Hours Lec	Conf	Lab	Clinic	Total	Credit Hours
Fall Interval								
CJT	431	Oral Pathology - Oral Radiology	20	10			30	3.0
DM	431-2	Dental Materials	22				22	-
Endo	431-2	Endodontology	6				6	-
Endo	630-40	Endodontology Clinic				11	11	-
FP	431-2	Principles of Fixed Prosthodontics	6				6	-
FP	631	Fixed Prosthodon-tics Clinic				33	33	1.1
OD	420-30	Oral Diagnosis & Treatment	7				7	1.3

			Clock Hours Lec	Conf	Lab	Clinic	Total	Credit Hours
Op	631	Operatives Clinic				66	66	2.2
Ord	431	Facial Growth	12				12	1.2
OS	431	Oral Surgery	12				12	1.2
Pedo	631	Pedodontics Clinic				33	33	1.1
Per	431	Periodontology Lecture	12				12	1.2
Per	631	Periodontology Clinic				33	33	1.1
Ro	630	Oral Radiology Clinic				10	10	-
RP	431	Removable Prostho-dontics Technic	9		27		36	1.8
RP	631	Removable Prostho-dontics Clinic				66	66	2.2

Winter Interval

DM	431-2	Dental Materials	13				13	3.5
Endo	431-2	Endodontology	6				6	1.2
Endo	630-40	Endodontology Clinic				11	11	-
FP	431-2	Principles of Fixed Prosthodontics	6				6	1.2
FP	632	Fixed Prostho-dontics Clinic				30	30	1.0
OD	432-3	Clinical Conference		2			2	-
Op	632	Operatives Clinic				60	60	2.0
Ord	432	Orthodontics	11				11	1.1
OS	432	Oral Surgery	11				11	1.1
Pedo	632	Pedodontics Clinic				30	30	1.0
Per	632	Periodontology Clinic				30	30	1.0
Pth	432	Pathology	22		22		44	3.3
Ro	630	Oral Radiology Clinic				10	10	-
RP	432-3	Principles of Remov-able Prosthodontics	11				11	-
RP	632	Removable Prostho-dontics Clinic				60	60	2.0

Spring Interval

Endo	630-40	Endodontology Clinic				11	11	-
FP	633	Fixed Prostho-dontics Clinic				33	33	1.1
Med	433	Principles of Medicine	12				12	1.2
OD	432-3	Clinical Conference		22			22	2.2
OD	630	Oral Diagnosis Clinic				33	33	1.0
Op	433	Principles of Clinical Operatives	12				12	1.2
Op	633	Operative Clinic				66	66	2.2
OS	433	Oral Surgery and Hospital Dentistry	12				12	1.2
OS	630	Oral Surgery Clinic				22	22	1.2
Pedo	633	Pedodontics Clinic				33	33	1.1
Per	633	Periodontology Clinic				33	33	1.1
PP	433	Dental Jurisprudence	12				12	1.2
Pth	433	Comprehensive Exam	12	22			34	2.2
Ro	630	Oral Radiology Clinic				10	10	1.0
RP	432-3	Principles of Remov-able Prosthodontics	12				12	2.3
RP	633	Removable Prostho-dontics Clinic				66	66	2.2
		Third Year Total						58.2

FOURTH Year

Fall Interval

DM	441	Dental Materials	12				12	1.2

			Clock Hours Lec	Conf	Lab	Clinic	Total	Credit Hours
Endo	630-40	Endodontology Clinic				12	12	-
FP	641	Fixed Prosthodontics Clinic				77	77	2.2
Med	441	Principles of Medicine	12				12	1.2
Med	440	Hospital Clinic				6	6	-
OD	441	Oral Diagnosis & Treatment Planning	11				11	1.1
Op	641	Operatives Clinic				154	154	4.4
Pedo	441	Pedodontics Conference		15			15	0.6
Pedo	641	Pedodontics Clinic				44	44	1.1
Per	641	Periodontology Clinic				5	5	0.2
PP	441	Professional Viewpoints	22				22	2.2
Ro	640	Oral Radiology				7	7	-
RP	641	Removable Prosthodontics Clinic				66	66	2.2

Winter Interval

Endo	630-40	Endodontology Clinic				10	10	1.9
FP	442	Principles of Fixed Prosthodontics	11				11	1.1
FP	642	Fixed Prosthodontics Clinic				66	66	2.0
Med	442	Principles of Medicine	11				11	1.1
Med	440	Hospital Clinic				6	6	-
Op	642	Operatives Clinic				143	143	4.0
Pedo	642	Pedodontics Clinic				30	30	1.0
Per	642	Periodontology Clinic				5	5	0.2
DP	442	Dental Psychology	11				11	1.1
Ro	640	Oral Radiology				7	7	-
RP	442	Principles of Removable Prosthodontics	11				11	1.1
RP	642	Removable Prosthodontics				60	60	2.0

Spring Interval

FP	643	Fixed Prosthodontics Clinic				99	99	3.3
Med	440	Hospital Clinic				6	6	0.9
OD	640	Oral Diagnosis Clinic				66	66	2.0
Op	643	Operatives Clinic				154	154	4.4
Ord	443	Orthodontics Conference		11			11	1.1
OS	640	Oral Surgery Clinic				32	32	1.0
Pedo	643	Pedodontics Clinic				33	33	1.1
Per	643	Periodontology Clinic				16	16	0.3
PH	440	Community Dentistry				30	30	1.0
PH	443	Gerodontology	11				11	1.1
Ro		Oral Radiology Clinic				7	7	1.1
RP	643	Removable Prosthodontics Clinic				66	66	2.2
		Fourth Year Total						52.4

Total basic science clock hours = 938

notion and has emphasized to trainees that the hospital does not endorse them as being competent to engage in family practice. However, since state laws permit an M.D. licensee to do any type of practice he wishes, it is the feeling of the director that the public would be better served by potential family practitioners having some rather than no additional training. Since there are a number of physicians seeking some training to change their specialty, consideration should be given to longer hospital training periods or a return to specially designed preceptorships to accommodate them.

With respect to those family doctors in retraining, the program would be improved by a more specific set of goals and more careful monitoring of achievements than has as yet been accomplished. The author is aware of two other programs offering similar training. At Creighton University School of Medicine rural family doctors are trained in a specific area, for example, cardiology techniques such as Swan-Ganz catheter insertion. At the Medical College of Pennsylvania inactive physicians or physicians in administrative positions are being trained in primary care.

Conclusions

A pilot miniresidency in family practice has been in operation at Santa Monica Hospital Medical Center since 1979. Many of the applicants were practicing in other specialties and seeking to make a change to family practice. It is unrealistic to expect that the available two- to six-week period can accomplish this objective, and there is a need for a different kind of program to accommodate such circumstances. Training goals for family doctor residency refresher training must be more specific and evaluations more formal than is now the case in the Santa Monica experience.

Ophthalmology Teaching in Medical Schools

Robert E. Kalina, M.D., Henry J. L. Van Dyk, M.D., and George W. Weinstein, M.D.

The Association of University Professors of Ophthalmology (AUPO) was founded in 1965 and is made up of the chairmen of all departments or divisions of ophthalmology in U.S. medical schools (1). A major interest of the body, individually and collectively, is medical student education.

Some members of the AUPO believe that recent medical school graduates are less well prepared in ophthalmology than those of the more distant past. Also reduced familiarity with ophthalmology by physicians in future generations has been cited as a potential problem in the legislative and legal arenas (2).

The results of two AUPO surveys of ophthalmology teaching are reported here.

Survey Techniques

Questionnaires were mailed in 1974 and again in 1979 to the members of the AUPO. Each member was asked to complete the form or to forward it to the individual in his unit most responsible for medical student education. Confidentiality was optional and was elected by some.

The survey document used in 1979 duplicated the questions of 1974 and in addition

This survey was supported in part by a grant to the University of Washington from Research to Prevent Blindness, Inc.

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inquired about the usage and usefulness of the *Ophthalmology Study Guide for Students and Practitioners of Medicine*, a joint publication of the AUPO and the American Academy of Ophthalmology and Otolaryngology (AAOO) which first appeared in 1976 and now is in its third edition (3). This guide is based upon seven objective areas thought to represent essential knowledge requirements for all physicians. These objectives were developed as a result of a survey of 1,600 respondents representing medicine at undergraduate and graduate levels of general and specialty orientation (4, 5).

Results

Responses were received from 74 of 102 member schools in 1974 (73 percent) and from 81 of 110 schools in 1979 (74 percent) (Figure 1). There was a decline in mean required curriculum hours from 25 in 1974 to 22 in 1979, while the median declined from 18 to 15. Hours actually assigned to the department or division of ophthalmology decreased proportionately from a mean of 22 in 1974 to 20 in 1979. Assigned hours were used most frequently for lectures or demonstrations.

All responding institutions offered medical student electives in ophthalmology in 1979, but only a minority of students chose them (mean 25 percent, median 15 percent). Use of audiovisual self-instruction units rose from 66 percent in 1974 to 82 percent in 1979.

The study guide, not available in 1974, had been adopted as a syllabus by 58 percent of institutions in 1979, while 28 percent used another syllabus, usually prepared locally. In most cases the study guide was purchased by the student and used for self-instruction and as a supplement to lectures. The microfiche illustrations, newly added in the third edition (1978), had been found useful by students in 67 percent of schools using the study guide.

Discussion

The surveys reported here were prompted in part by suspicion among the AUPO members that curriculum time devoted to ophthalmology had suffered during the widespread curriculum revisions which have taken place in U.S. medical schools during recent years.

Although data are not available from the preceding era, the results of the study reported here indicate that currently assigned time for

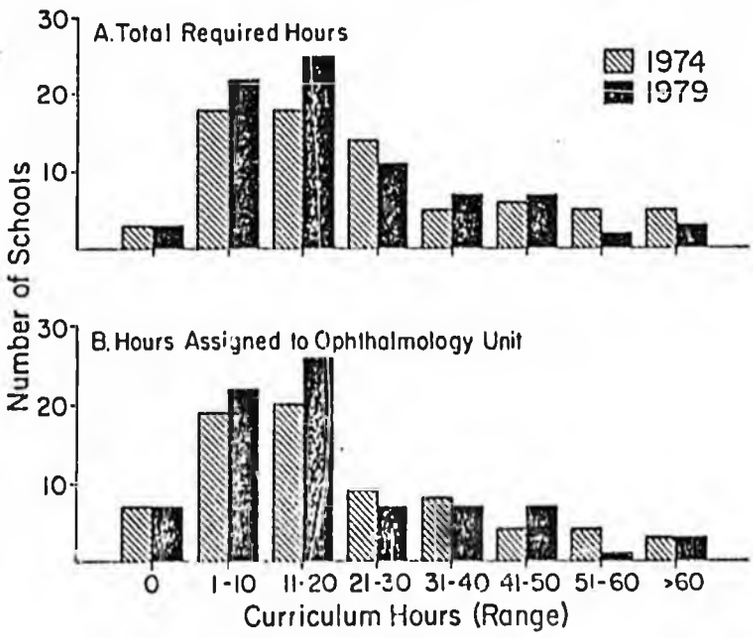

FIGURE 1
Minimum requirements for ophthalmology in U.S. medical schools.

teaching ophthalmology is limited and gradually declining. One logical extension might be a declining ability for appropriate diagnosis, management, or referral of patients with eye disorders, who form a significant segment of those seeking primary care.

The results of these surveys may not include ophthalmology teaching done in the primary care clinical setting. It seems likely that such on-site instruction would be effective and appear relevant to students in that the patient-problem-teacher loop is shortest there; but the authors believe that such teaching events are rare, often unscheduled, and likely to be the first to suffer from time constraints.

Knowledge that curriculum time was limited and that competition for it was keen was one of the prime motivating factors for the development of the AAOO/AUPO study guide. Standardization of objectives to be achieved was presumed then as now to be a laudatory goal. However, the availability of clearly defined objectives has coincided with apparent reduced national curricular emphasis upon ophthalmology.

Not only is the curricular time available to ophthalmology small, but also surprisingly few students (25 percent) choose ophthalmology electives. The reasons for limited elective participation may range from the influence of counselors to lack of available electives. Whatever the cause, the effect must be negative upon student appreciation for what the specialty offers. In view of the excess of candidates for the limited number of ophthalmology residency positions, a main concern is that students who will practice other specialties, especially primary care, learn proper diagnosis and treatment of some ophthalmic disorders so that they may avoid inappropriate referral to medical or nonmedical practitioners.

References

1. Cogan, D. G. Association of University Professors of Ophthalmology. *Arch. Ophthalmol.*, 74:740, 1965.
2. Winograd, L. A. What's Happening in Medical School? *Ophthalmologist*, March–April, 1978.
3. *Ophthalmology Study Guide* (Third Edition). San Francisco: American Academy of Ophthalmology, 1978.
4. Spivey, B. E. A Technique To Determine Curriculum Content for Medical Students. *J. Med. Educ.*, 46:269–274, 1971.
5. Spivey, B. E. Ophthalmology for Medical Students: Content and Comment. *Arch. Ophthalmol.*, 84:368–375, 1970.

TO: HESS Committee Members DATE: May 10, 1983
FROM: Heidi H. Borson
RE: HB 225, CSHB 225 Versions 1 and 2

COMPARATIVE ANALYSIS

CSHB 225 Version #2	HB 225
Sec. 1 An optometrist with an endorsed license may use and prescribe legend drugs, and may use nonprescription drugs under this chapter.	Sec. 1 An optometrist with an endorsed license may use and prescribe legend drugs.
Includes the following:	
Sec. 2 Adds one person to the of examiners in optometry.	No alteration to present board statutes.
Sec. 3 Stipulates that the added member will be a licensed physician in Alaska; requires that the public member on the board have no direct or indirect interest in the practice of optometry, opticianry or medicine.	Not included.
Sec. 4 Under powers and duties of the board of examiners in optometry: 3) States that the board, with the guidance of the state medical board, shall develop a list of specific prescription, nonprescription, diagnostic and therapeutic drugs and their dosages that may be used by authorized optometrists. 4) Mandates the provision of continuing education for optometrists who want to use drugs.	Not addressed in HB 225.
Sec. 5 With regards to registration: b) Adds that an optometrist may not be certified to practice optometry beyond the scope of his/her training; stated that the board of examiners in optometry is determine an optometrist's qualifications.	No alteration to present statutes.
Sec. 6 Adds another ground for disciplinary action by the board: 10) Using the prefix 'Dr.' or 'Doctor' before the license holder's name without using the word 'optometrist' in connection with the title.	Not addressed.

Comparison continued:

CSHB 225 - Version #2	HB 225
Sec. 7 Regarding the use or prescription of drugs: Subsections a,b,c,d,e refer to 'drugs'.	Sec. 2 Regarding the use or prescription of drugs: Subsections a,b,c,d,e refer to 'legend drugs'.

In addition:

Definitions for 'optometry', 'practicing optometry', and 'legend drugs' are the same in HB 225 and CSHB 225 - Version #2.

Both bills also include Section 08.64.360 regarding penalties for practicing without a license or in violation the applicable statutes.

CSHB 225 - Version #2 and CSHB 225 - Version #1 differ in one respect only, that being that CSHB 225 - Version #1 adds Section 08.72.278 regarding approved drugs. This section names drugs which may be used in addition to the list of drugs to be developed by the board of examiners of optometry and the state medical board.

STATE OF ALASKA
THE LEGISLATURE

LEGISLATIVE AFFAIRS AGENCY

POUCH Y · STATE CAPITOL
JUNEAU, ALASKA 99811
907-465-3800

MEMORANDUM

February 17, 1984

SUBJECT: Optometry
(HB 225)

TO: Representative Mae Tischer
Chairman, House Health, Education,
and Social Services Committee

FROM: Russ Josephson
Legislative Counsel

You have requested a comparison of the introduced version of HB 225 and the committee substitute for your committee dated February 3, 1984. Perhaps it will be easiest to compare the two bills if I begin with a brief sectional analysis of each bill.

HB 225

Section 1 Amends the provision of law governing the practice of medicine by persons other than physicians by adding a new paragraph allowing optometrists to use certain drugs under the provisions of the remainder of the bill.

Section 2 Provides for identification and approval of (1) training programs for the use of drugs and (2) continuing education programs. Also provides for license endorsements certifying completion of required training for drug use, regulations concerning the use or prescription of legend drugs, the loss of license endorsements for violations of those regulations, and the furnishing of the names of holders of license endorsements to the board of pharmacy.

Section 3 Amends the definition of "optometry" reflect the provisions of the bill for the use of drugs.

Section 4 Amends the definition of "practicing optometry" as in Section 3.

Section 5 Adds a definition of "legend drugs".

Section 6 Adds optometrists to those excepted from the provisions of law penalizing the practice of medicine by persons who are not physicians.

CSHB 225 (HESS)

Section 1 Provides an additional ground for the imposition of disciplinary sanctions that the board of examiners in optometry may impose under AS 08.72.240: use, dispensing, or prescription of a drug in violation of the new provision regulating drug use by optometrists (Section 2). In addition, provides a modification of the provision that requires referrals to appropriate health care practitioners.

Section 2 Adds a new section to the statutes, providing for the use of legend drugs, excluding controlled substances and other types of drugs. Lists the categories of topical legend drugs that may be used by an optometrist who has obtained a license endorsement from the board of examiners in optometry. Lists the requirements for a license endorsement, including the required training before and after receiving an endorsement.

Section 3 Contains a new definition, "legend drugs". Also amends the definitions of "optometry" and "practicing optometry" to reflect the provisions of the bill concerning the use of drugs. The definition of "legend drugs" is identical to that in the introduced version of the bill. The amendments of "optometry" and "practicing optometry" differ from those in the introduced version of HB 225 in that they have added a phrase to exclude the use of surgery in diagnosis and treatment. The definitions in the introduced version of the bill do not mention surgery.

As you can see, the two bills accomplish basically the same thing. The major differences are as follows:

HB 225 contains (in Sections 1 and 6) amendments regarding the practice of medicine and providing the necessary exemptions for optometrists using drugs. CSHB 225 (HESS) does not contain these provisions, but it should.

Both bills provide for license endorsements and for the training required before and after receiving an endorsement. HB 225 provides for regulations to handle those requirements; CSHB 225 (HESS) provide more detail in the statute.

CSHB 225 (HESS) provides a new ground for discipline by the board of examiners in optometry; violation of the provisions concerning drugs. It also amends another ground for discipline, failure to refer a patient to the appropriate health care practitioner. Neither of these provisions was in the introduced version of the bill. HB 225 did provide for regulations concerning the use or prescription of legend drugs, and it provided for the suspension or revocation of the license endorsement for violation of the regulations.

CSHB 225 (HESS) is more specific than HB 225 in its detailing of the types of drugs that may be used by optometrists.

The definitions in CSHB 225 (HESS) contain provisions concerning the prohibition of surgery in diagnosis and treatment by optometrists. Similar language does not appear in HB 225.

HB 225 provided for the names of endorsement holders to be submitted to the board of pharmacy. CSHB 225 (HESS) does not contain this provision.

I trust these sectional analyses and this comparison will be useful. If I may be of further service, please call.

RJ:ojb
J3/111

MSG 84-00005682 PRTY 1 01/21/84 13:09:15 ORIG: SOL$ IN= 0007 OUT= 0022
FROM: SOLDOTNA/ TO: JUNEAU T/C
TARGET: LJHV SUBJ: F. STATS H.HESS OPTOMETRY 1/21

****

LEGISLATIVE TELECONFERENCE NETWORK SIGN-IN SHEET

****

SATURDAY, 1/21/84 :DATE
SOLDOTNA, :SITE/LOCATION
H. HESS, REP.TISCHER "HB-225, :SPONSOR/SUBJECT
OPTOMETRY AND PRESCRIPTIONS"

NAME/REPRESENTING	ADDRESS/PHONE	TESTIFY	OBSERVE
1. ROBERT O'CONNELL OPTOMETRY	BOX 3470 SOLDOTNA 99669		X
2. PETER CANNAVA MD	BOX 1629 SOLDOTNA 99669	X	
3. JOHN DEMSKE OD	RT.2 BOX 368 SOLDOTNA AK. 99669	X	
4.			

_____STATS_____
2 ___TESTIFY/ED 10:30 AM T/C STARTED
1 ___OBSERVE/ED 12:50_____T/C ENDED
3 ___TOTAL

MSG 84-00005784 PRTY 1 01/21/84 15:27:47 ORIG: LF20 IN= 0003 OUT= 0013
FROM: LYNDG/TBX TO: JNU T/C
TARGET: LJHV SUBJ: FINAL STATS - HSE HESS 1/21

****

LEGISLATIVE TELECONFERENCE NETWORK SIGN-IN SHEET

****

JANUARY 21, 1984____:DATE
FAIRBANKS_____:SITE/LOCATION
HSE HESS/REP TISCHER HB225_____:SPONSOR/SUBJECT
(OPTOMETRIST & PRESCRIPTIONS)

TESTIFIED/PARTICIPATED:

1. JIM GRAVES, OPTOMETRIST, FBX CLINIC OPTOMETRIC CENTER, 1867 AIRPORT WAY, FBX #452-1761 EXT279

OBSERVED:

_____STATS_____
1_____TESTIFY/ED *****T/C STARTED _____
_____OBSERVE/ED *****T/C ENDED:_____
1_____TOTAL

=====EOM