

On the Teaching and Learning of Clinical Wisdom

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This paper is based on the assumption that clinical competence includes a dimension beyond technological considerations. This dimension is sometimes called "art" but here has been termed "wisdom" in the hope that the latter word lends itself more easily to description. The components of clinical wisdom are explored in terms of assessment of the patient's personality as well as assessment and management of his problems. Behavioral objectives are defined which can be adapted to a curriculum for medical students or residents and can serve to identify and begin to measure the competency of clinical wisdom. These behaviors are observable and learnable, are to considerable extent quantifiable indicators of clinical wisdom, and are therefore legitimate concerns of medical education.

One of the highly prized but often incalculable attributes of a physician is that he or she be "wise." Clinical wisdom is more easily recognized than defined and is ordinarily attributed only to a few of one's actual professional acquaintances. Experience in practice seems to be one requisite but is not a guarantor. One is too often reminded of the cliché about "one year's experience twenty times."

As medical educators we secretly dare to hope for a modicum of wisdom among ourselves and fondly wish to see a promise of it in our students. Given the elusiveness of a clear definition, we usually settle for something a great deal less — a "safe physician" being one of the more frequent compromises. While a safe physician certainly is not to be eschewed in favor of a dangerous one, the expression seems too passive and negative to represent

the higher achievement. "First do no harm" is a wise aphorism but it is difficult to think of the wisdom of an Osler primarily in such terms.

This paper will aim to distinguish clinical wisdom from clinical judgment, describe its component parts, and develop educational objectives for teaching this essential ingredient of excellent medical practice.

Clinical Judgment versus Clinical Wisdom

Clinical judgment and clinical decision-making are subjects of a good deal of writing but these do not capture the most important nuances of wisdom. The issues and assumptions about clinical judgment have been summarized concisely by Harty.¹ The book, "Clinical Judgment," by Feinstein represents a more exhaustive treatment.²

Mathematical and statistical models of the internal and logical processes used by a clinician in arriving at a diagnosis or predicting patient behavior have consistently compared favorably with the performances of physicians under experimental conditions.³ Factors such as observer error, problems of inter-rater reliability and inconsistency of judgments by the

same observer at varying times point to the fallibility of the clinician as a diagnostician. As a matter of fact, Antley and Antley have suggested that this role of the physician may already be in danger of becoming obsolete in favor of computers, automated laboratories and sonar diagnostic devices.⁴ Should this futuristic and utopian state of affairs come to pass there will remain a critically important role for the human physician in the management of patients and their health problems. It is in this role that I subsume the concept of "wisdom." In fact, this role may turn out to be the unique and quintessential one. If this be so, we should by all means include the teaching of this role in our curricula. With this statement I am rejecting the notion that the "art of medicine" is so intuitive and peculiarly personal as to preclude rational analysis.

Component Behaviors of Clinical Wisdom

Assessment of the Patient's Personality

Every clinical diagnosis, except the most trivial and transient, should include an appropriate assessment of the patient's personality. This is fundamentally an interviewing skill. Kolb has commented that the interview is the most important technical instrument of all those professions concerned with man and his social functioning.⁵

The wise physician knows that it is not enough to determine what condition the patient has, but also what patient has the condition. Accurate personality assessment has relevance for all aspects of the clinical situation and enables the physician to make a number of informed decisions about management and to predict important characteristics of the developing doctor-patient relationship.

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As a minimum the general physician should be adept at recognizing and dealing with obsessive-compulsive, hysterical, paranoid, passive-aggressive and sociopathic personalities in all their varieties. Issues of compliance, disclosure, seductiveness, dependency, hostility, scheduling of appointments and fee arrangements are all dependent variables that must be negotiated in every continuing clinical relationship. These can be handled effectively only if the physician knows with whom he is negotiating — and has some clear perceptions of his own personality. As in marriage, the ongoing clinical relationship operates under the terms of an informal “contract” that is often more powerful than the formal one. Clinical competence is more often at the mercy of the strictures of the informal contract than the fund of biomedical information the physician possesses. One can only guess at how often diagnoses are delayed, unnecessary and risky tests are ordered and inappropriate treatment prescribed because objectivity is subverted by unrecognized personality factors.

Assessment of the Patient's Problems

Notwithstanding the recent salutary emphasis on clinical record-keeping, the problem-oriented record and computer applications to clinical data, there are certain prior considerations that deserve emphasis in the interests of wisdom. It is apparent that simply changing the form of the record — or even improving its legibility — does not guarantee its validity or its congruence with actual events. I am among those who feel that “s.o.a.p.-ing” the record often results in an impoverishment of significant details that cannot be incorporated easily into this format. Among these prior considerations I offer the following as necessary to wise practice.

1. *Ascertaining the Real Reason the Patient is Seeking Health Care.* This is what Feinstein referred to as the iatrotrophic stimulus, as opposed to the chief complaint. Two recent examples illustrate what is meant.

A college student came to the health center three times within a month requesting a VD test. On the first two occasions the request was

granted and negative reports given. On the third visit a wise physician engaged the student in sufficient interviewing to determine that a strong homosexual liaison was disintegrating and the student was using a medical-sexual metaphor in the hope that someone would discover this problem.

A 65-year-old woman requested a “check-up” but was quick to reassure the physician that it was simply routine — she denied any health problems. It was only in response to persistent but gentle inquiry that she “confessed” that she had been taking amphetamine “diet pills” regularly for five years. She was feeling guilty and worried that the pills might be damaging her health.

Behind many chief complaints lurks a melange of fears, fantasies, myths and secrets that motivates health-seeking behavior which the physician must not ignore or fail to elucidate.

2. *Ascertaining the Patient's Rank Order of Priorities among His Health Problems.* This dimension includes finding out how the patient has organized his concerns prior to the consultation, what rationalizations have already been made, what he thinks the trouble might be and how seriously he regards it. The patient rarely presents himself to a physician with no preconceptions about his health and it is imperative that the physician take these into account. Consider this example:

A very apprehensive young secretary was under the impression (probably erroneous) that she had ulcerative colitis. She consulted a new physician because of intermittent diarrhea. In the course of the physical examination, a heart murmur was discovered. The patient, compliant but frustrated and angry, found herself in the midst of a cardiac diagnostic work-up which seemed to her not only irrelevant but cost more than she was able to pay.

This is not to imply that the murmur deserved no consideration but in relation to this particular patient it should have been evaluated after her priorities had been respected. Imposition of the physician's priorities on the patient is to be avoided by the wise physician except under circumstances described below.

3. *Establishing a Rank Order of the Patient's Problems in Terms of Clinical Importance.* The two component dimensions of clinical wisdom which

have been described are but two of several which influence a more comprehensive ordering of the patient's health problems in terms of their overall clinical importance. In the course of interviewing and examining a patient, the physician may discover conditions of which the patient is unaware or devalues inappropriately. These must be added to the list of problems in proper sequence for further study and/or management. Among other factors to be considered by the physician are the following.

Functional and organic elements: The wise physician has long since abandoned the dichotomy of body and mind that pervades much clinical thinking. He knows that an either/or attitude toward health problems leads to unnecessary and inaccurate conclusions, and that the real clinical task is to assess the proportion of organic and functional components in each case. The most difficult clinical problems always involve both. This is a liberating insight which allows the physician to value both sides of the equation and to avoid the obsessive search for organic factors of a low order of probability or importance. One can only speculate how often chemical diabetes, borderline hypothyroidism, degenerative arthritis and other chronic stable conditions are seized upon as a way of avoiding a more difficult clinical task of identifying and dealing with a situational reaction or a depressive reaction. The wise physician knows that the “relief of discovery” of an organic diagnosis is soon dissipated and he will be called upon to produce additional diagnoses to “explain” the next recrudescence of symptoms.

On the other hand, the physician should not be deflected by functional complaints from recognizing potentially threatening conditions which require specific treatment. It has been demonstrated that patients diagnosed as manifesting conversion hysteria or depression have an incidence of organic diseases and death higher than in the general population.^{6,7} This may be interpreted retrospectively as representing errors in the initial diagnosis or as indicating the frequent association of functional and organic conditions. In either case it behooves the physician to maintain objectivity, to avoid labelling patients uncritically and to be willing to reevaluate patients when new symptoms are presented.

Personal, social and economic factors: These factors may constitute clinical problems per se but more often function as modifiers of other problems. Medical practice always involves a series of compromises and negotiations that take into account reality factors in the patient's life which affect his ability to accept recommendations. The demands of work schedules, the limitations of finances and the impact on other members of the family often impose an order of their own on what the patient is able to choose. The timing of elective surgery, prescription of diets, limitations of physical activity, drug therapy and recommendations for psychotherapy must be tailored to the individual patient. Often this means tolerating delay, accepting ambiguity and modifying "textbook" therapeutic regimens on the part of the physician. *Wisdom is knowing when such compromises are feasible and when they are not.* It presupposes the clinician's ability to rank-order the patient's problems in terms of clinical importance and to focus on those which deserve top priority. Knowing that these decisions are neither trivial nor irrelevant is a mark of a wise practitioner.

Management of the patient: In perhaps no other aspect of clinical practice than management of the patient is wisdom manifest — management here being used as a more comprehensive term than treatment. This is attested by a long line of illustrious physicians from Hippocrates to present. The writings of Richards, Peabody, Houston and Fox form a curricular base that should be the foundation of all physicians' education in management.⁸⁻¹¹

The first important principle is that management grows out of an appropriate relationship between doctor and patient. Peabody in 1927 set the tone, "The treatment of a disease may be entirely impersonal: the care of a patient must be completely personal . . . for the secret of the care of the patient is in caring for the patient."⁹ Elaborating on this theme, Richards wrote, "But once a physician does take upon himself the responsibility for a patient's care, instantly he becomes a different man . . . suffering, moreover, is different from misfortune: it comes not in battalions, but by one and one. Each man's is his own."⁸ Houston added an important

reminder, ". . . the doctor's attitude toward the patient is perhaps more fundamental than the patient's attitude toward the doctor. . . the faith that heals is not through argument but by contagion."¹⁰ Finally, Fox specified the therapeutic attitude, "But if the physician is so good a doctor as not to be put off by weakness, folly, grief or sin, or even bad manners. . . the relationship can be something invaluable."¹¹

The consensus of these writers is that the physician's use of self in management is the critical ingredient. The proper use of self is far more technical and specific than simple having a good bedside manner or exhibiting common courtesy. It involves elements that must be learned and has goals that are as specific as any pharmacopoeia.

On the negative side, Fox said that a very important function of the personal doctor ". . . is to protect his patients from treatment they could do without — or would be better without."¹¹ On the positive side, Houston dealt at length with the proper use of the placebo. "The great lesson of history," he wrote, "is that the placebo has always been the norm of medical practice."¹⁰ That placebos have been exploited and that physicians have sometimes used placebos inadvertently or unselfconsciously does not nullify their validity. The placebo response occurs in relation to all modes of therapy and restrains undue enthusiasm for all new treatments.

All this implies is that empathy is the sine qua non of clinical practice. The capacity to use one's own feelings to vicariously experience what the patient feels is a highly refined skill that the wise physician uses as adroitly as digitalis or delicate surgery. Empathy is not to be confused with intuition, personal idiosyncratic reactions, identification or projection. It is a cultivated and refined use of one's reflective knowledge of human experience — one's own as well as others — coupled with careful listening, (termed by Ornstein as "evocative listening") that allows the physician to understand what it must feel to be in the patient's shoes. It is this perspective that allows for decisions about specific treatments, their potential benefit, risk and cost to be assessed objectively and honestly. This is the

essence of clinical wisdom. To treat or not to treat is a question that can only be answered within the context of a therapeutic relationship.

Educational Objectives for Teaching Clinical Wisdom

It is my conviction that clinical wisdom can be taught, evaluated and improved. The following behavioral objectives lend themselves to evaluation as adapted to various levels of sophistication of medical students and residents.

1. Given simulated or real patients in a clinical setting, the student will correctly identify, by means of personal interviewing, five personality types according to criteria established by psychiatric faculty:

- a. obsessive-compulsive
- b. hysterical
- c. paranoid
- d. passive-aggressive
- e. sociopathic

2. Given five patients of these personality types, the student will describe orally or in writing:

- a. the "core" dynamic conflict in each type
- b. prediction of the issues and behaviors that must be negotiated in order to establish a therapeutic relationship with each type.

3. Given a real or simulated patient, the student through interviewing will elicit and identify the iatrotrophic stimulus and defend his interpretation to a faculty supervisor who either has programmed the patient or who will corroborate or deny the interpretation with the patient.

4. Given a patient with multiple health problems, the student will, after appropriate interviewing and physical examination, construct two lists of problems in order:

- a. the patient's priorities
- b. the clinical and therapeutic priorities according to the degree of threat each problem poses to the patient's life or functional ability.

5. Given a patient with a conversion symptom or psychophysiologic reaction, the student will design and implement, under supervision of a faculty member, a therapeutic strategy that includes the use of placebo medication for a period of not less than three months.

6. Given a patient as above (5), the student will design and implement, under the supervision of a faculty member, a therapeutic strategy that does not include the use of medication for a period of not less than three months.

7. Given a patient with a chronic, active clinical disease process such as peptic ulceration of the gastrointestinal tract, rheumatoid arthritis, recent onset of diabetes mellitus or diffuse hyperthyroidism, the student will design and implement a comprehensive plan for management appropriate to the patient's psychological status, social class and economic condition as agreed upon with a faculty supervisor. The plan must take into account the patient's need for:

- a. drugs
- b. diet
- c. exercise and rest
- d. support
- e. environmental manipulation

f. consultation

g. role of co-professionals and/or allied health persons

8. Given a patient with an indication for elective major surgery, the student will carry out, under supervision, the following clinical tasks:

a. Explain the need for surgery and establish the patient's acceptance of the need.

b. Negotiate the scheduling of the procedure.

c. Obtain appropriate surgical consultation.

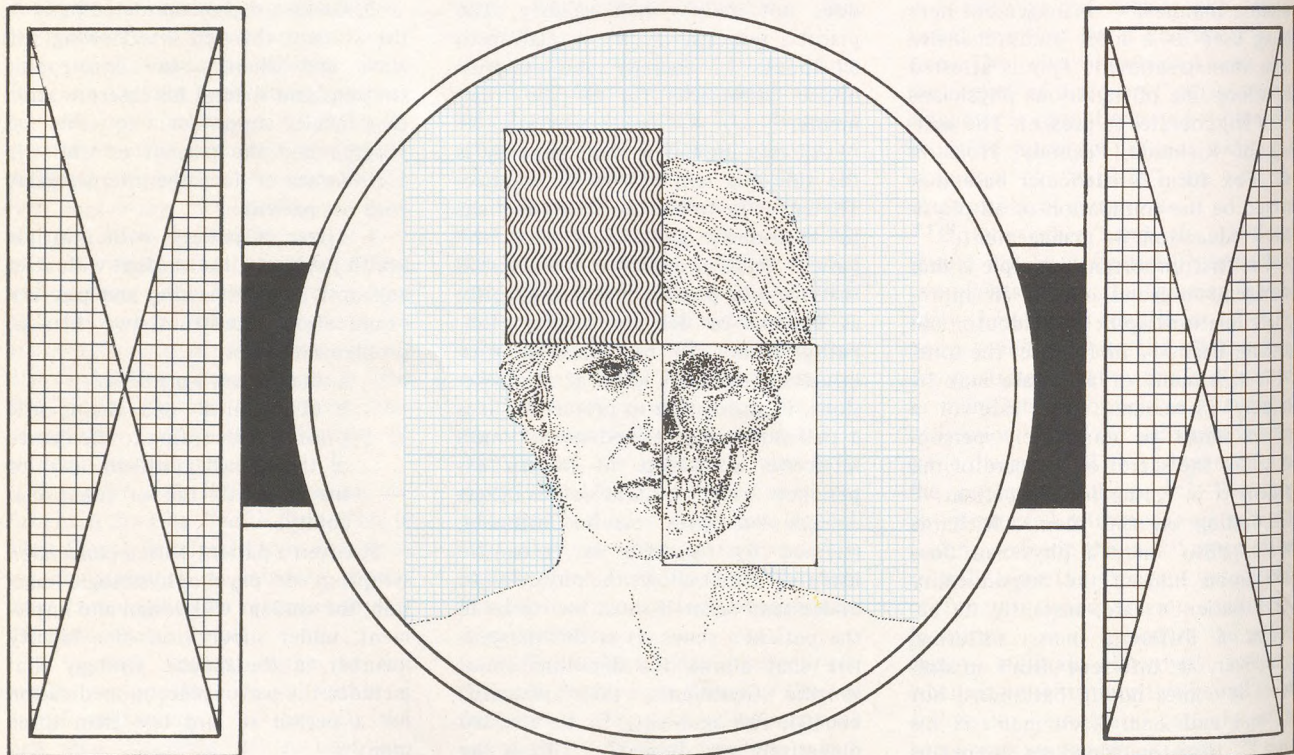
d. Prepare the patient for the procedure in terms of informed consent, anticipated time sequences for hospitalization and convalescence, and costs.

9. Given a patient with a depressive reaction or chronic anxiety, the student will demonstrate the use of empathy in a supervised interview, and afterward discuss his feelings towards the patient in a way that indicates his

ability to distinguish empathy from idiosyncratic personal reaction, identification and projection.

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formed behavioral studies of smoking titration do strongly suggest that people make some attempt, albeit not a very precise one, to keep themselves "dosed" with nicotine.

Is Smoking an Addiction?

Even though Samuel Johnson used smoking as an example when he defined *addiction* in his dictionary, there is considerable controversy as to whether it truly qualifies as an addiction. One would have to demonstrate a pharmacologic agent sought by the smoker as well as some type of abstinence syndrome on acute withdrawal of the drug.

A wide variety of dysphoric changes occur in smoking abstinence, many suggesting that the arousal level drops from that chronically induced by nicotine. Anecdotal reports of withdrawal syndromes appear frequently in the scientific and popular literature (USPHS Report 1103, 1964, Brecher 1972, Larson and Silvette 1971). The desire to smoke (craving) and abstinence symptomatology vary according to the time of day, and decrease with length of abstinence (Gritz and Jarvik 1973, Shiffman and Jarvik, personal communication). It has been difficult to measure a definable, physiologic abstinence syndrome under controlled experimental conditions, but decreases in heart rate and blood pressure have been found (Knapp et al 1963, Weybrew and Stark 1967). In addition, significant decreases in adrenalin and noradrenalin levels, increased skin temperature, and improved hand steadiness were observed over five days of nonsmoking (Myrsten et al 1974).

All of the above changes could be the result of a gradual readjustment in arousal level rather than a classic abstinence syndrome characterized by central nervous system hyperexcitability.

Although the American Psychiatric Association is probably going to include compulsive tobacco use as a new diagnosis in the next edition of the DSM III, it is not yet clear how it will be defined. Very likely any individual who feels his smoking is a problem and wants to be cured is a candidate for the diagnosis. Whether smokers who don't want to stop will be considered suffering from this disorder is still a debatable question.

The argument has been made, particularly by antismoking forces, that smoking is an insidious illness, while 50 years ago smoking was considered a sophisticated habit attacked only by puritans or religious fundamentalists. In the early stages the smoker is trapped by a habit he can break only with great difficulty. Today it is recognized that a variety of disabling and fatal illnesses (emphysema; Buerger's disease; coronary atherosclerosis; cancer of the lung, mouth, pharynx, larynx, esophagus, bladder or prostate; peptic ulcer; or cirrhosis of the liver) are associated with heavy smoking over a 30 to 40-year period.

Psychologic and Physiologic Effects of Smoking

Cigarette smoking produces a panoply of physiologic responses, most of which can be reproduced by the administration of nicotine. These include electroencephalographic effects characteristic of arousal though other complex actions may supervene (Ulett and Itil 1969).

Nicotine releases a variety of biogenic amines, both peripherally and centrally. Possibly the central release of catecholamines is responsible for the reinforcing effect (Hall and Turner 1972). The release of epinephrine from the adrenal medulla must be responsible in part for the noticeable sympathetic effects of smoking, including tachycardia, vasoconstriction

and rise in blood pressure, rise in free fatty acids, and tremor. Excitation of respiration is a prominent effect and may be a direct action of nicotine on the medulla and peripheral chemoreceptors. Nausea and vomiting, so prominent in novice smokers, is due to stimulation of the chemoreceptor trigger zone in the medulla. Nicotine also causes an increase in gastrointestinal activity. The morning cigarette is used as a laxative by some heavy smokers.

Does Nicotine/Smoking Produce Stimulation or Sedation?

There have been a variety of psychoactive effects of nicotine, ranging from stimulant to tranquilizer, reported in the animal as well as human (Dunn 1973). This is not surprising since nicotine is a complex drug acting on central and peripheral nervous systems as well as directly on various organs, such as the heart. Most of the psychoactive effects relate to the arousal level of the organism. In examining various studies it is important to differentiate acute from chronic effects, and to consider the nature of the task that is being either facilitated or disrupted by nicotine. It thus becomes easier to relate experimental results to ordinary human smoking, which is a chronic behavior occurring in a variety of circumstances.

Some recent animal work sheds an interesting light on the brain mechanisms affected by nicotine. In a provocative study in rats, Nelson (1976) found that nicotine could antagonize the disrupting effect upon behavior of stimulating the reticular formation. Furthermore when rats first learning a task were injected with nicotine, their

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learning was impaired, but their post-acquisition behavior was facilitated. The overall impression to be derived from these studies is that chronic nicotine administration facilitates motivated well-learned task performance, especially in an arousal-oriented vigilance task such as the one described above.

Researchers in smoking behavior (Tomkins 1966, Russell 1971, Myrsten et al 1975) have attempted to characterize the situations in which people choose to smoke, for example, those low on the arousal continuum (lying in bed) or high on the continuum (meeting a deadline on a project). Trying to distinguish smokers in such a manner is part of the previously mentioned extensive literature on the "smoking personality." We will concentrate here upon studies relevant to the question of raised or lowered arousal level and the need to smoke.

When subjects were selected by questionnaire for smoking exclusively in high arousal or exclusively in low arousal situations, it was possible to show impaired or facilitated performance on difficult-to-easy vigilance tasks. Performance on a sensorimotor task was facilitated in the situation in which he would ordinarily not have smoked (Myrsten et al 1975). This study used only light smokers (fewer than 15 cigarettes per day), and was highly selective in choosing the two subject samples; most people smoke in a range of situations in a fairly automatic fashion, especially as the number of cigarettes smoked per day increases.

The same group of researchers (Myrsten et al 1972) established that smoking facilitated performance over nonsmoking levels in a boring, simple reaction-time task, and also improved performance over time in a difficult, stressful reaction-time task in which performance usually deteriorated. In all of these studies smoking increased physical indices of arousal, such as heart rate and catecholamine excretion, over baseline nonsmoking levels. Subjective reports of arousal and mental efficiency did not differ much among conditions, probably because people are not aware of changes in

mood or performance while smoking regularly, only when deprived for "substantial" periods of time (even a few hours for some smokers). In fact, showing a "gruesome" medical film to both heavy and light smokers reduced smoking in both groups; lying on a couch produced an increase in smoking for all subjects (Fuller and Forrest 1973).

In sum, it would appear that the predominant central actions of nicotine and smoking are toward arousal. On the other hand, depression of the petellar reflex in man accounts for some of the relaxation experienced by smokers (Domino 1973). The most likely possibility is that it may have either effect, depending on the state of the smoker and on the dose of nicotine taken (Tomkins 1966, Myrsten et al 1975).

Does Nicotine/Smoking Have an Effect on Learning and Memory?

Stimulant drugs, such as amphetamine, improve cognitive and psychomotor performance by raising arousal levels and reversing fatigue effects, but under certain circumstances may directly facilitate learning (Weiss and Laties 1962, Hunter et al 1976). Nicotine has stimulant effects as well, which may facilitate performance and learning.

Enhancement of attention and arousal by nicotine have been obtained in animals (Nelsen 1976, Bovet-Nitti 1969, Garg 1969). Although claims were made for facilitation of learning processes in some of these studies, it was not possible to rule out arousal as the basic mechanism, especially when nicotine was administered before the learning trials on a daily basis. Prompted by suggestive animal findings, studies were conducted on humans. Facilitated learning of the pursuit rotor, a psychomotor tracking task, was reported by Frith (1968). However, on nonsense syllable learning, a cognitive task, smoking impaired

immediate performance but had a facilitating effect on recall scores 45 minutes later, after the effects of the single cigarette had worn off (Anderson 1975). Smokers claim they concentrate better, work more efficiently, and think more clearly while smoking, claims that should be carefully investigated.

Toxicity of Tobacco

The acute debilitating effects of smoking are rarely noted by smokers who are tolerant to the actions of nicotine. Nonsmokers, however, can become acutely ill from smoking only a single cigarette, with evidence of nausea, vomiting, diarrhea, salivation, abdominal cramps, sweating, headache, dizziness, disturbed hearing and vision, and marked weakness. Pallor may be seen and faintness may occur, with circulatory shock in severe cases of nicotine poisoning. Nicotine is much more toxic when smoked than when swallowed because of the protective activity of the liver.

Very sensitive nonsmokers may react adversely to cigarette smoke in a closed room. It is unlikely that pharmacologic levels of nicotine can be inhaled from smoke in such a dilute form, but carbon monoxide may reach significant levels in a small, close space, and some individuals are allergic to smoke components.

The major health hazards from smoking result from the chronic use of cigarettes; they have been extensively described in the medical literature since the influential Surgeon General's Report (1964). Smoking still has its advocates who feel that the health hazards have been exaggerated. A drug that produces illness in an animal, even

after several hours, is subsequently frequently avoided (Garcia et al 1974). The delay between onset of smoking and appearance of illness (negative reinforcement) may be 40 years, whereas positive reinforcement takes only a few seconds. This discrepancy in latency of positive (immediate) and negative (delayed) reinforcement accounts for the difficulty in extinguishing the habit.

Treatment of the Smoking Habit

Should the physician try to stop his patients from smoking? If they want to stop, then it is clear that he has the obligation to try. This will be much more difficult if the physician himself smokes, as 25 percent of physicians do. If the patient does not want to stop, then there is the difficult issue of intrusion by the physician. Advising the patient about the health risks involved in smoking and establishing whether there is any personal risk to the patient are of crucial importance. However, heavy smokers are rarely disturbed by some nebulous future risk to themselves or even demonstrable damage by smoking to a friend or relative.

While the pharmacologic basis of the smoking habit may be self-administration of nicotine, the act of smoking involves many complex behaviors. Extinguishing the smoking habit involves reducing to very low levels, or completely eliminating the longing for nicotine as well as the motor and social aspects of the habit, which are so routine and comforting by themselves (secondary reinforcement). Behavior therapy (smoking-induced sickness, shock, disease data), psychotherapy, and hypnotherapy have all been tried on smokers seeking to quit. Many smoking clinics, both

profit-making and nonprofit, use variants of behavior therapy. Some of the factors involved in successful treatment include the amount of personal attention, the length of the treatment, and the desire of the smoker to quit. But the relapse rate is high for all types of treatment, about 80 percent after only three months to one year of abstinence (Hunt and BESPALC 1974). Although purely behavioral therapies are most commonly employed to cure the smoking habit, pharmacotherapy has occasionally been used with the aim of easing dysphoria and facilitating the learning of substitute behaviors.

If nicotine seeking is the basis of the cigarette smoking habit, then substitution of nicotine ought to relieve the craving for cigarettes. There are a few studies in which nicotine was administered intravenously (Lucchesi et al 1967) or orally (Jarvik et al 1970) and in which nicotine antagonists were administered orally (Stolerman et al 1973). Significant, although small alterations in the number of cigarettes subjects chose to smoke occurred in each study; nicotine decreased smoking, and the nicotine antagonist mecamylamine increased it. Judging from these experimental results, the selection of a cigarette was only partially determined by blood level of nicotine. Subjects in these studies were not trying to give up smoking, thus altering their smoking behavior was quite impressive. A chewing gum containing nicotine bound to an ion exchange resin has recently been developed (Brantmark et al 1973). There has been evidence of short-term beneficial effects, but long-term benefit has not yet been demonstrated.

Lobeline, a drug that resembles nicotine in some respects, has been tried as a substitute, but most well-controlled studies show no advantage of lobeline over a placebo (Davison and Rosen 1972). Only Ejrup (1963) had marked success with lobeline in Sweden, using large parenteral doses over a six-month period.

The impression from a recent survey of the literature on drug therapy for smoking was that none of the following agents has been particularly useful in helping smokers to quit: amphetamine, methylphenidate (Ritalin), fenfluramine (Pondimin), diazepam (Valium), phenobarbital, or

meprobamate. Placebo or drug therapy seems to be equally effective in the short run in helping smokers to cease smoking or to cut down sizably on the daily number of cigarettes. Combined with some form of psychotherapy, initial success rates are even higher (Schwartz and Dubitsky 1967, 1968; Hunt and BESPALC 1974). However, what really counts is the long-term effects of any form of therapy. To be effective a smoking cure should be permanent, which means that one and five year follow-ups are essential.

It is entirely conceivable that either a nicotine substitute or some new method of administering nicotine, which will satisfy a smoker's need, will be found. At the moment no one has succeeded in substituting nicotine for smoking on a long-term convincing basis. Either there is some other component to the cigarette habit besides the nicotine, which makes it very reinforcing, or for some as yet unknown reason the cigarette smoking route of administering nicotine is more reinforcing than any other. Only further research will throw light on this important question.

A compromise between ignoring the patient's smoking habit and trying to make him stop if he cannot, is to convert him to a less hazardous form of tobacco — none without attendant risk. He might try cigarettes with tighter filters or lower tar and nicotine content. In the absence of any illness feedback from cigarettes, chances are that smoking patients will revert to their accustomed smoking levels. It may be useful to send the patient to a smoking clinic, such as those sponsored by the American Cancer Society, where a certain percentage of patients are actually permanently cured of smoking.

The only reason why a person will give up a pleasurable habit is because he realizes that the cost to him will be greater than the benefits he experiences. Attempts should be made to increase the immediacy and the personal relevance of the dangers of cigarette smoking to be sure that smokers feel personally threatened. How to accomplish such indoctrination most successfully must be the subject of

future research. Epidemiologic evidence shows us that highly educated individuals (such as physicians) are much more apt to be influenced by evidence about the harm of smoking than the poorly educated, but intellectual factors alone are clearly not enough to inhibit smoking. One can see the utilization of defense mechanisms, such as denial, rationalization, and projection, to counter the threat of cigarette-caused disease and death. More intensive study of the factors responsible for success in ex-smokers should result in the development of more effective and rational therapies.

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