THE ABSORPTION OF DRUGS

There seems to be a more or less general assumption that if a drug is soluble in water it will be absorbed in a satisfactory manner when introduced into the alimentary canal or injected into the subcutaneous or intramuscular tissues. A few seem to take the opposite stand, namely, that most drugs are absorbed so poorly from any channel of administration that, to secure therapeutic effects, they must be injected intravenously. Both of these views, according to Cary Eggleston, New York (Journal A. M. A., August 11, 1923), are obviously erroneous. The matter of solubility of a drug in water, he says, bears no necessary relation to the question of its absorbability from the gastro-intestinal tract. Food may retard absorption, through too great dilution of a drug; by the large amount of colloid present; by combining with the drug to form a less absorbable compound, or in other ways. No general rules can be laid down as to the influence of meals on the absorption of drugs, hence this factor must be determined separately for each drug. -The increased circulation during digestion may facilitate absorption, and it is probable that mild degrees of congestion from other causes have a similar effect. Several drugs have been shown to be absorbed more promptly when administered in dilute alcohol than when given in water. Other mild irritants, by inducing slight local congestion, will probably be found to produce the same result. If the drug itself is irritant, this property may facilitate its absorption if it is administered in sufficiently dilute solution. Higher degrees of local irritation, however, seem to delay absorption. Whether this is due to injury to the epithelium is not known, but such a mechanism seems probable. Local ulceration of the mucosa, on the other hand, may enhance the absorption of some drugs, especially those toward which the membrane is normally more or less impermeable. Anemia of the alimentary canal probably always impairs absorption of drugs as well as of the products of digestion. The rate of absorption after oral administration may be determined for man in different ways. The degree of uniformity of absorption is just as important as is the rate. Some drugs seem to be taken up from the rectum quite as rapidly and as effectively as when given by mouth, some possibly better; but most are probably much less satisfactorily absorbed.

The liver is capable of fixing and destroying or otherwise eliminating a great many drugs. This fact has been used as one of the arguments against oral administration, as compared with other methods, since drugs so given generally enter the systemic circulation only after initial passage through the liver. Even with a drug that is fixed or destroyed rapidly, a more or less considerable proportion will usually escape change in the liver and enter the general circulation. The oral dose of such a drug will, therefore, merely have to be made sufficiently large to allow for the portion which is destroyed during the first passage through the liver. The assumption that liver fixation or destruction is a serious bar to effective oral administration is not warranted by the common experience of therapeutists. The relation between the rate of elimination and the duration of action of a drug on the one hand, and the rate of its absorption from different channels of administration on the other, determines the mode of administration, the dosage and the frequency of repetition of drugs, except for those few agents whose actions may prove life-saving in circumstances of great urgency, such as strophanthin in cardiac failure and epinephrin in shock.

Until much more definite information is available, oral administration must unquestionably remain the most satisfactory and the most precise method. The dose of a drug may be defined as that amount which will just suffice to produce the desired effect in a given patient under the particular existing conditions. This dose cannot be known in advance, for it is not the same in different patients, nor even in the same patient at different times. By oral administration, fractions of this dose can be given as often as necessary, until the desired dose is absorbed and the action sought has been developed. By varying the size of the fractions and the frequency of repetition, the required dose can be approximated with greater certainty and precision than by any other method, and the rapidity with which the effects are developed may also be controlled with some degree of accuracy.

The Workmen's Compensation Act—The Workmen's Compensation Insurance Act was at first viewed with alarm both by the employer and the medical profession. It was a labor measure and felt to be revolutionary socialism. At the present time it is acknowledged to be a real protection to the employer as well as the employe. Due to the efforts of the council of the State medical society, this act is now becoming a satisfactory arrangement for the medical man.

The insurance carriers started furnishing medical services under this act without reference to the medical profession, set their own fee schedule, required unnecessarily elaborate reports and dictated medical policy as they saw fit. The man who was doing compensation work dealt as an individual with the insurance company.

The council of the State society has put more work upon this insurance problem than upon any other work that has confronted it; for, at first, the insurance carriers refused to recognize or to meet with it, much less co-operate. Four years of effort at a tremendous personal expense has been given to obtain an arrangement that is just to the medical man as well as efficient protection to the insured.

There have been four tangible results that are tending to make the operation of this law satisfactory from a medical standpoint:

1. The insurance carriers have come to deal with the medical profession as a whole, and problems of general policy are made with the advice and consent of the medical society through conferences and written agreements. The ordinary medical man knows nothing of the insurance problems, can form no estimate of rates or fees and is in no position to dictate or defend himself. The council of the State society has acquainted itself with the whole insurance problem, and can and does deal intelligently with the insurance carriers.
2. The State society has obtained the payment of more adequate fees for insurance work. There has been a flat raise of 25 per cent and a real flexibility in emergency procedures, and these changes are now embodied in the rulings of the State Compensation Commission. The entire field of fees was canvassed by the committee and the insurance companies, and such an adjustment could never have been obtained without organized effort.
3. The elaborate and burdensome report system has been simplified and the necessary clerical work reduced to a minimum. The council, through its committee, instigated an investigation of all insurance forms and then produced records and report blanks of its own that represented the standard required by the medical profession as adequate and satisfactory. Most of the insurance carriers have adopted these forms as recommended.
4. The council has extended the insurance field so that the work is open to practically the entire membership of the society. A survey has been made of the qualifications, specialties and willingness to co-operate of each of the society members and such records have become the basis for designated insurance lists. Instead of the work being limited to a few, the council has made it possible for any member of the society to do insurance work.

These are a few of the problems of industrial insurance that are being solved by the State medical society as the result of intensive work by the committees backed by the entire organization.—(Lyell C. Kinney, M. D., Bulletin of the San Diego County Medical Society, August 10, 1923.)