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10th Edition

Essentials of Pharmacology

for Health Professions

Bruce J. Colbert, MS, RRT
Adam J. James, PharmD
Elizabeth D. Katrancha, DNP, CCNS, RN, CNE

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***Essentials of Pharmacology for Health Professions,* Tenth Edition**
Bruce J. Colbert, Adam J. James, Elizabeth D. Katrancha

SVP, Product Management: Cheryl Costantini

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Portfolio Product Director: Laura Stewart

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Learning Designer: Debra Myette-Flis

Course Lead: Ken McGrath

Content Project Manager: Dinesh Deivendiran

Manager, Product Marketing: Annie Gillingham

Content Acquisition Analyst: Erin McCullough

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Contents

Schedule Number	Abuse Potential and Legal Limitations	Examples of Substances
4, CIV	Lower abuse potential than the previous schedules Prescription may be written out by the health care professional but must be signed by the physician Prescription may be phoned in by the health care professional or faxed May be refilled up to five times in six months All C-IV prescriptions are uploaded to the state's (if available) prescription drug monitoring program (PDMP)	Valium, Ativan, Xanax, phenobarbital, Librium, Restoril, Ambien
5, CV	Low abuse potential compared to the previous schedules Consists primarily of preparations for cough suppressants containing codeine and preparations for diarrhea (e.g., diphenoxylate) May be refilled up to five times in six months	promethazine with codeine, Cheratussin AC, Lomotil

Note: This control schedule can vary from state to state. Some states may have stricter schedules than the federal regulations. You must be aware of the regulations in your area.

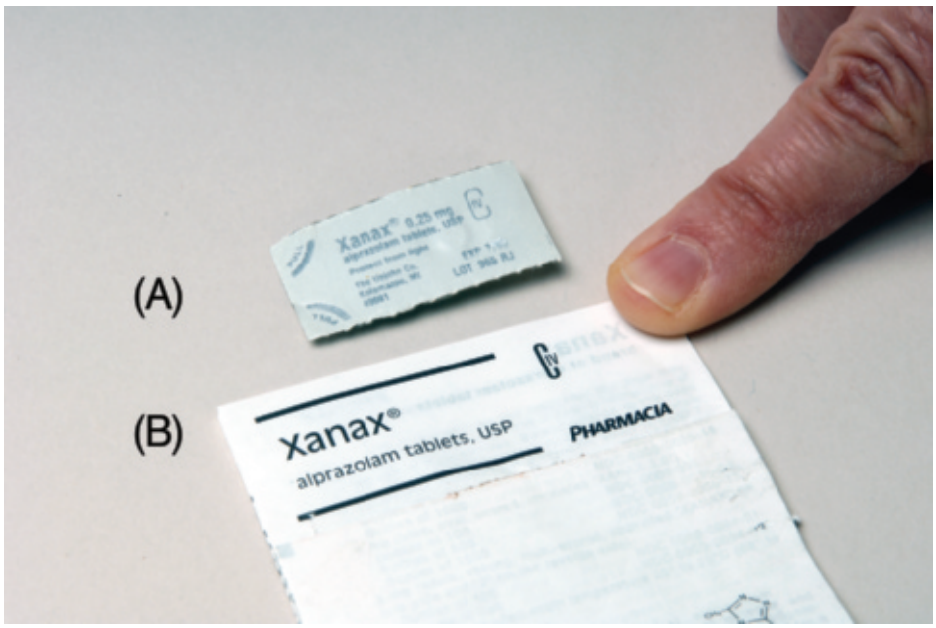

Figure 1-3 Controlled substance schedule numbers appear in a variety of drug information resources, including (A) drug packages and (B) drug inserts. Schedule numbers are also found in drug reference sources.

Clinical Application

Although many other drug laws exist, there are two significant pieces of drug legislation that are important to mention here. The 1983 Orphan Drug Act gives pharmaceutical companies financial incentives to develop medications for diseases that affect only a small number of people. This encourages the companies to develop **orphan drugs** that would otherwise be of low profitability. The other legislation is the strangely named Omnibus Budget Reconciliation Act (OBRA) of 1990. This act mandates that all OTC drugs a patient is taking must be documented as part of the medical record. OBRA also mandates that pharmacists provide drug use review and patient counseling before dispensing prescriptions to a patient.

4. Shake the actuator off to remove as much water as possible and allow the actuator to dry overnight.
5. Replace the canister in the actuator and shake well, spray two sprays into the air away from your face, then replace the cap on the mouthpiece.

Dry-powder inhalers (DPIs) provide medication (especially corticosteroids and long-acting beta$_2$ agonists) only under the pressure of spontaneous inspiration rather than through compression of the valve (Figure 17-2). Therefore, the patient must be able to generate sufficient inspiratory effort on their own to deliver the medication, and therefore this device should not be used in acute respiratory distress. This option is helpful for patients who are unable to coordinate inspiration with actuation of a conventional MDI.

Small-volume nebulizers (SVNs), more commonly referred to as nebulizers, create an aerosol mist of a drug solution that can then be inhaled into the lungs through a mouthpiece or a mask. The aerosol is created by either compressed air or oxygen gas, and the optimal breathing pattern is a slow, deep breath with a sustained breath hold; the aerosol should be delivered over an 8–12-min period (refer to Figure 17-3).

Orawan Pattarawimonchai/Shutterstock.com.

Figure 17-2 An example of a dry-powder inhaler (DPI).

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Figure 17-3 Child receiving a small-volume nebulizer (SVN) aerosol treatment with a mask.

Sympathomimetics

Sympathomimetics (adrenergics) are potent bronchodilators that increase vital capacity and decrease airway resistance. The adrenergics work on the smooth muscle in the lungs to cause relaxation. Examples include albuterol, epinephrine, and salmeterol.

An important classification system is differentiating between short-acting beta agonists (SABAs) and long-acting beta agonists (LABAs). SABAs, such as albuterol, are the drug of choice for managing acute exacerbations of asthma. LABAs, such as salmeterol, are used for prophylactic treatment. SABAs are also known as *rescue medications,* as opposed to the LABAs, which are known as **maintenance medications**.

Side effects of the adrenergics include potentiation of theophylline effects with increased risk of toxicity, especially:

Gastrointestinal (GI) (nausea, vomiting, and decreased appetite)

Cough, throat irritation, hoarseness, and sinusitis with inhaled preps

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