

1: Calculate Doses of Oral and Parenteral Liquid Medications | Clinical Gate

Calculating Oral Liquid Medications Using Ratio and Proportion. As you learned in Chapter 7, when using the ratio and proportion method of drug calculation, the dose available (DA) and the dosage form (DF) must be one ratio, and the dose ordered (DO) and dose to be given (DG) must be the other ratio in the proportion. With liquids, DF and DG will be in volume, whereas DA and DO will be in strength or weight of drug.

Proper fractions are less than 1 and improper fractions are more than one 1. Fractions are written as: Both proper and improper fractions can be reduced to their lowest common denominator. Reducing fractions make them more understandable and easier to work with. You have to determine which number can be divided evenly into both the numerator and the denominator to reduce fractions. A fraction cannot be reduced when there is no number that can be divided evenly into both. To reduce this fraction you would divide 24 by 8 which is 3 and you would then divide the 56 by 8 which is which is 7. This calculation is performed as seen below. You have to convert all mixed numbers into improper fractions before you can perform calculations using them. The procedure for converting mixed numbers into improper fractions is: Multiple the denominator of the fraction by the whole number Add the numerator of the fraction to this number Place this number over the denominator of the fraction The calculation below shows how you how you convert a mixed number into a fraction. All decimals are based on our system of tens; in fact the "dec" of the word decimal means The first place after the decimal point is tenths; the second place after the decimal point is hundredths; the third place after the decimal point is referred to as thousandths; the fourth place after the decimal point is ten thousandths, and so on. When the decimal point is preceded with a 0, the number is less than 1; and when there is a whole number before the decimal point, the decimal number is more than 1. For example, if your answer to an intravenous flow rate is When you have to round off a number like If the number in the tenths place is 5 or more, you would round up the 67 to 68 drops. Similarly, if you have to round off the number Here are some decimal numbers rounded off to the nearest whole: In this case, you will have to mathematically convert the gr into mg. The table below shows conversion equivalents among the metric, apothecary and household measurement systems.

2: Dosage & Calculation and Safe Medical Administration - For Students | ATI

This calculator determines the liquid or solution volume to be injected by syringe into the patient. The label on the medicine bottle states the concentration of the medicine. The concentration is the mass of medicine contained in a volume of liquid. The mass is the have dose. The volume is the quantity.

It is also important to note that you should never use an oral syringe to give injectable medication, because oral syringes are not sterile. Parenteral Medications Routes of Administering Parenteral Medications Parenteral medications are any medications given by injection. Injection is usually given in one of three different ways: A subcutaneous injection is one that is given in the fatty layer of tissue under the skin. The maximum amount of fluid an adult can safely be given subcutaneously is 1 mL. Sometimes you may see this abbreviated as s. An intramuscular injection is one that is given in the muscle. The maximum amount of fluid an adult can safely be given intramuscularly is 3 mL; for a child, the maximum is 1 mL. An intravenous injection is one that is given directly into the vein. Note the abbreviations for subcutaneously, intramuscularly, and intravenously: We will wait until later lectures to learn in depth about IV medication; for the moment, we will give subQ, IM, and IV medications using syringes only. Types of Syringes Used for Parenteral Medication There are several different sizes of syringes that might be used for medication. You should always use the smallest possible syringe in which the dosage will fit, because the smaller the syringe, the more accurately you can measure the dosage: This is the most commonly used syringe. Every tenth of a mL is marked on the syringe, and every half mL is labeled; this means that any dosage we plan to measure using a 3 mL syringe should be rounded to the nearest tenth. Dosages between mL should always be measured in a 3 mL syringe. Some 3 mL syringes have the mL scale to the right and a minim scale to the left; be careful not to measure mL on the minim scale, as this will result in an incorrect dosage! A tuberculin syringe is used to measure small doses, so it is often used to dose small children and infants. There are two different sizes of tuberculin syringes which you might encounter: Any dose smaller than 0. Because a tuberculin syringe has every hundredth of a mL marked whereas the 3 mL syringe has only every tenth of a mL marked, it is possible to measure doses with more accuracy in a tuberculin syringe. When an IV dose requires a syringe that can hold more than 3 mL, a 5, 6, 10, or 12 mL syringe can be used. On each of these size syringes, every 0. Dosages between mL should be measured using one of these syringes; always choose the smallest possible syringe in which the dose will fit to ensure the highest level of accuracy. Occasionally it is necessary to use even larger syringes to measure IV fluids. In this case there are syringes that can measure a maximum of 20 mL or more; these syringes only have every mL marked. Any dosage above 12 mL must be measured using a 20 mL syringe or larger. These are special pre-filled cartridges produced by two specific companies that can be dropped into a plastic injector with a plunger for injection. The ones we will encounter in this class will have markings every tenth of a mL and will contain up to 2. Tubex cartridge Carpuject cartridge Measuring Dosages in a Syringe To measure a dosage in a syringe, we must line up the top of the black rubber plunger exactly with the line that marks the dosage we want to administer. If we look closely, we can see that this syringe has the top of the black rubber stopper lined up with the third mark past the 2. Since this is a 3 mL syringe and has every tenth of a mL marked, that means that we are three tenths past 2, which is a total of 2. Since this is a 3 mL syringe and has every tenth of a mL marked, that means that we are one tenth past 2. If we look closely, we can see that this syringe has the top of the black rubber stopper lined up with the third mark past the 4. Since this is a 6 mL syringe and has every 0. If we look closely, we can see that this syringe has the top of the black rubber stopper lined up with the second mark past the Since this is a 12 mL syringe and has every 0. Since this is a 20 mL syringe and has every whole mL marked, that means that we are two whole mL past 10, which is a total of 12 mL. If we look closely, we can see that this syringe has the top of the black rubber stopper lined up with the third mark past the. Since this is a tuerculin syringe and has every hundredth of a mL marked, that means that we are three hundredths of a mL past 0. Reading Medication Labels and Calculating Dosages Reading Medication Labels Before we can even begin to calculate how much medicine to give a patient, we must be able to read a medication label correctly. There are several important pieces of

information we should look for whenever we look at a medication label: Name of the medication There are actually at least two names on every medication label: The trade name is the name assigned to the drug by the manufacturer and it varies from one company to another. A single drug may have many different trade names if it is manufactured and sold by many different companies. The trade name of a drug is usually capitalized. For example, you may be familiar with the over-the-counter pain relievers Advil and Motrin. These are actually two different brand names for the same drug that is manufactured by two different companies. The generic name is the name assigned to the drug officially in the United States. The generic name of a drug is generally written in lower case letters. So, Motrin and Advil are trade names that each refer to the same drug, and its official generic name is ibuprofen. If you look closely at a bottle of Advil or Motrin, you will see that the labels on each bottle state that they contain ibuprofen. A drug may be ordered by its brand name or by its generic name, so it is very important to pay attention to both kinds of drug names so that you can identify a drug by either one when it is ordered. The most common dosage units are milligrams, grams, micrograms, grains, Units and milliequivalents. Administration units These are units which are used to measure the drug for actual administration to the patient. The most common administration units are tablets, capsules, teaspoons, tablespoons, ounces, drops, liters, and milliliters. Concentration or Dosage strength This tells us what the relationship is between the dosage units and the administration units. Because almost all drugs are ordered in dosage units but administered in administration units, we must have a way to convert from one set of units to the other; this is what the concentration of a drug allows us to do. Total amount of the drug contained in the package This is exactly what it sounds like: Expiration date All drugs have an expiration date on them, usually prefaced by the abbreviation EXP.

3: DavisPlus - Calculating Drug Dosages : A Patient-Safe Approach to Nursing and Math

2. Now, write down the strength and amount of medication you have available: Dose On Hand: mg/ml 5. The 5 ml will have to be the numerator of the fraction so that the mg will cancel out. 3. Now solve the problem: ml mg mg/ml 5 5 1 ml. The mg cancels out leaving only the ml label, which is desired in the answer.

How to calculate drug dosage The dosage calculator finds what dose of a medication is appropriate for your weight. Read on to learn what is the drug dosage calculation formula and how to use it. With our text, you will learn more about various kinds of dosing which you may meet while using different medications. You will also find out what are advantages of adjusting the dose to the patient. Are you looking for a healthy antipyretic medication dose for kids? Make sure to take a look at the ibuprofen dosage calculator and paracetamol dosage calculator! Dosage forms Depending on the route of administration, dosage forms come in several types. You may take drugs through different methods. The most popular one is oral. However, in some medical situations this route is unavailable, ineffective or associated with a high number of adverse reactions. That is why patients may receive drugs also through parenteral way this includes: Moreover, some drugs are only given topically, directly on the skin, to the eye, rectum, vagina or as an inhalation. You should know that the route of administration of the drug dramatically influences the dosage and efficacy, thus always check if you administer appropriate drug to the appropriate person, through the appropriate route in the appropriate dose! What is an appropriate dose? When treating a patient or just taking yourself any medication we always need to wonder what exact dose of the drug should we choose. And the truth is that we dose or should dose nearly everything in our life, from cooking dinner, to taking medications! One dosage Drugs with one fix dosage are the easiest in use, you just take it and forget about all the stuff. Blood concentration-dependent dosage of the drug This is a relatively small group of drugs. The doses are different regarding the serum concentration of the active substance of the drug. Vitamin K antagonists, lithium 5. It means, that two patients with the same disease may receive a different amount of the same drug! Our dosage calculator will help you calculate appropriate doses of this kind of drugs! Why do we need to calculate doses? Living in the sixteenth-century Swiss scientist Paracelsus said: The right dose differentiates a poison and a remedy. We know that every substance, especially every drug may be toxic if given in an inappropriate dose. This is why we should perform our dosage calculations with carefulness and accuracy. It is critical in the management of children, as a slight mistake in the dose of the drug may cause a significant change in the effect of its action. The usage of pediatric dose calculator seems to be a responsible choice that reduces the risk of a mistake! Contemporary scientists are also looking at the issue of drug dosage. There are plenty of on-going clinical trials, in which different doses of the drugs are being compared. Moreover, there are more and more scientific data suggesting that individually performed dosage calculations not only in pediatric patients improve patient survival when compared with standard treatment with fix doses. For instance, in a group of scientists from France published an article in Journal of Clinical Oncology in which they summarized the results of their trial performed on the patients treated due to metastatic colorectal cancer cancer of large bowel in the IV stage of the disease - with metastases. The group of them, which was treated with individually adjusted dose of fluorouracil antimetabolite drug used in the treatment of many cancers, including colon cancer had better response to the therapy, higher survival rate and lower grade of toxicity, than those treated with standard doses. Dosage calculation formulas If you want to calculate the dose of a medication, you need to use the following equation: Dosage is the prescribed amount of drug in mg per kg of body weight. You can usually find this number on the medicament box or the prescription. Dose is the total amount of medication you need to take. The situation gets more complicated if your medicament is liquid. After all, how are you supposed to know how many ml of your drug contain, for example, 50 mg of active substance? Our dosage calculator can help you with this as well. All you have to do is use the following formula: It can be expressed in mg per ml. This function of our dosage calculator is especially useful when giving fluid drugs e. Conversion from mg to ml is essential in situations like these! How to calculate drug dosage If you want to find what is the appropriate dosage of a drug for your body weight, you need to follow these steps: Determine the dosage of

CALCULATION OF PARENTERAL MEDICATIONS pdf

the medication. Multiply these two values to get the dose of medication in mg: You need to take mg of active substance. What if your medication is liquid? Type the concentration into the proper box. Divide the dose by medicine concentration to obtain the liquid dose: Make sure to take a look at our drug conversion calculators, such as steroid and opioid conversion calculators! Dosage Calculator can be embedded on your website to enrich the content you wrote and make it easier for your visitors to understand your message. It is free, awesome and will keep people coming back! Get the HTML code.

4: Omni Calculator logo

Learn dosage calculations with free interactive flashcards. Choose from different sets of dosage calculations flashcards on Quizlet.

In fact, medication errors are the cause of 1. These errors are due to the wrong drug, dose, timing, or route of administration. Dosage and timing For all medications, you should only give the dosage described in the prescription label or other instructions. Dosage is carefully determined by your doctor and can be affected by your age, weight, kidney and liver health, and other health conditions. For some medications, dosage must be determined by trial and error. For these drugs, your healthcare provider would need to monitor you when you first start treatment. For instance, if your doctor prescribes thyroid medications or blood thinners, you would likely need to have several blood tests over time to show if the dosage is too high or too low. To be effective, many medications need to reach a certain level in your bloodstream. They need to be given at specific times, such as every morning, to keep that amount of drug in your system. Taking a dose too soon could lead to drug levels that are too high, and missing a dose or waiting too long between doses could lower the amount of drug in your body and keep it from working properly. Potential problems Adverse events, or unwanted and negative effects, can occur with any drug. A drug with high risk of adverse effects may be administered only by a healthcare provider. And in some uncommon cases, your healthcare provider may keep you in their facility so they can observe how the drug affects you. If you notice any problems, be sure to let your doctor know. Talk with your doctor Be sure to take your medications correctly to get the most out them and to reduce your risk of side effects and other problems. Make sure that you understand everything about taking your medication. If you have any questions, talk to your doctor. Some questions you might ask include: Can you explain your instructions more clearly? My nurse gives me my medication now. Can I be trained to give it to myself? Can a family member or healthcare provider give it to me instead? Are there any side effects I should watch for? What time of day should I take this drug? Or does it matter? Am I taking any medications that this drug could interact with? Why do I have to be so careful? Why would it matter if I took too little or too much medication? It might matter a lot. You have to take every dose on time, and you must take all of it until the prescription is gone. For instance, opioid pain medications, such as oxycodone or codeine, are dangerous if you take more than prescribed. You could become addicted to the drug or you could overdose and die. Healthline Medical Team Answers represent the opinions of our medical experts. All content is strictly informational and should not be considered medical advice.

5: Calculations used in intravenous preparations | Basicmedical Key

Reconstituting parenteral medications in powdered form, calculating doses in liquid form.

6: Online Drug Calculations - Los Angeles Career College

How to calculate drug dosage accurately: advice for nurses 1 September, The lack of basic maths skills can be a major problem when it comes to nurses administering drugs to patients.

7: Dosage Calculation of Parenteral Medications

Dosage Calculation and Safe Medication Administration. Used as a compliment to Pharmacology Made Easy, this easy-to-use online study program includes tutorials, case studies and interactive drills, allowing you to learn pharmaceutical math skills at your own pace.

8: Lecture 3: Reading Medication Labels and Basic Dosage Calculations

CALCULATION OF PARENTERAL MEDICATIONS pdf

Parenteral Dosage of Drugs. Parenteral – Most medications prepared in liquid form and -Calculate to determine exact amount.

9: www.enganchecubano.com - Helping Nursing Students Learn Dosage Calculations

Dosage Calculation and Safe Medication Administration is an interactive, media-rich, online tutorial that is designed to provide curricular support for faculty and help students learn the basics of safe medication.

The Arbor House necropolis The women of Liberty Creek Marine terminal operations The Political and Economic Transition in East Asia Managing Sickle Cell Disease in Low-Income Families (Health, Society, and Policy) The phantom tollbooth Leeds, 1720. The American almanack for the year of Christian account, 1720. U00a7 114. Italian writers 620 Specificity and immunobiology of larval digenean-snail associations Coen M. Adema Eric S. Loker Laying Hands on Missionaries The Handbook of International Psychology Game development with blender mike pan Aipmt test papers Exalted 3rd edition errata V. 1. Ramesses I, Sethos I and contemporaries The norton anthology of american literature 1865 to present Circannual changes in photoperiod and environment affects fertility in the pig Olli Peltoniemi. Where to ebooks The passing of the third floor back My stroke of luck The joys of the poor: Kathleen Norris. Vancouver on the Columbia The XVIIth century. Nexus Archives Volume 4 (Archive Editions (Graphic Novels)) DNA-Protein: Structural Interactions Georgia O'Keeffe home studio, New Mexico Thinking Living Skills The politics of marriage in contemporary China Sanaa rolex learning center Genetic Algorithms Reference Volume 2 Mutation operator for numerical optimization problems Next generation wireless networks Handbook of optical design Basic College Mathematics (Students Solution Manual) Save google book as mac Moses encounters violence (Exod. 2:11-25) The Certeau Reader (Blackwell Readers) Solid, toxic, and hazardous waste Countries and currencies Healing mother wounds Outfit for Oregon, 1847