I'm not robot

reCAPTCHA

Continue

I'm not robot

reCAPTCHA

Pediatric dosage calculations made easy

Given the weight of a patient and a dosage specified in terms of weight, calculate the necessary dosage. These problems are a type of pediatric dosage calculations. Formula: Weight in Kg * Dosage Per Kg = Y (Required Dosage) Example: A doctor orders 200 mg of Rocephin to be taken by a 15.4 lb infant every 8 hours. The medication label shows that 75-150 mg/kg per day is the appropriate dosage range. Is this doctor's order within the desired range? Weight in Kg * Dosage Per Kg = Y (Required Dosage) Convert 15.4 lb to kg. lb → kg (÷ by 2.2) 15.4 lb ÷ 2.2 = 7 kg 7 kg * 75 mg/kg = 525 mg (Minimum Desired Dosage) 7 kg * 150 mg/kg = 1,050 mg (Maximum Desired Dosage) 24 hours in one day and the medication is ordered every 8 hours. 24 hrs / 8 hrs = 3 times per day doctor ordered medication 200 * 3 = 600 mg ordered per day 600 mg is within the desired range of 525-1,050 mg Yes doctor has ordered a dosage within the desired range. Example: Solumedrol 1.5 mg/kg is ordered for a child weighing 74.8 lb. Solumedrol is available as 125 mg / 2mL. How many mL must the nurse administer? Weight in Kg * Dosage Per Kg = Y (Required Dosage) Convert 74.8 lb to kg. lb → kg (÷ by 2.2) 74.8 lb ÷ 2.2 = 34 kg 34 kg * 1.5 mg/kg = 51 mg x Volume Per Have = Y (Liquid Required) x 2 mL = 0.82 mL MedCalc: Pediatric Dosing Calculator Dose (cc) = dose (mg/kg/day) x weight (kg) concentration (mg/cc) x frequency Created: Tuesday, April 22, 2002 Last Modified: Pediatric drug calculations can be a real challenge. Especially if the process for its correct calculation is not known. In this article I will explain how to calculate the pediatric dose of the main medications in Pediatrics. Dosage in Pediatrics. Unlike adults, in which most medications already have a set dose. In Pediatrics, it is necessary to calculate the dose to be administered according to the weight in Kilograms (Kg) or the Body Surface. The most used Pediatric Medication Dose Calculation is based on the patient's weight in Kg. However, the most exact method is the one that uses the Body Surface. General aspects for the calculation of Pediatric Dose To calculate the Pediatric Dose of a drug, you need to know 3 essential data: Patient weight (Kg).Drug dosage. Presentation of the drug. It is preferred to work with the Weight in Kilograms. Most of the literature and doses are expressed in Kg. Therefore, if the patient's weight is in pounds, it will be necessary to convert it into Kg. It is also important to pay attention to the Dosage of the medicine. Some medications bring their dose expressed in a total to be administered during the day. While others express it in doses to be administered every certain number of hours. For example: the Paracetamol Dose is 10-15 mg / Kg / dose every 6h. This means that this dose can be repeated every 6 hours. But the Cefixime Dose is 8mg / Kg / Day. Video of how to calculate Pediatric Dose How to calculate the Dosage of Medicines in Pediatrics To calculate the Pediatric Dose of a drug, the Weight in Kg or the Body Surface can be used. However, the most used method is based on Weight in Kg. In this article I will explain you step by step how to do it. Pediatric dose calculation according to weight in Kg The first thing we must do is Calculate the total Dose to be administered of the Medication. Which we obtain by multiplying the Dose by the Weight of the Patient. (So it is imperative to know the patient's weight) If for some reason it is not possible to weigh the patient, their weight can be determined using the Ideal Weight Formulas. Calculate the Dose of Paracetamol. For example the Dose of Paracetamol is 10-15 mg / Kg / dose. This means that we can use a dose of at least 10 and a maximum of 15 mg. In this example we will use a 15 mg dose in a child weighing 12 kg. Therefore, the total dose to be administered is: Total dose = (Weight of the patient in kg) x (dose of Drug)Total dose = (12 Kg) x (15mg) = 180 mg In this example 180 mg is the total to be given. But "NO" is what we will give the patient. Before giving the indication we must know the presentation and concentration of the drug. Paracetamol for example can be found in various presentations. As a tablet, as a suppository or as a Syrup. In Pediatrics, most of the medications that are administered orally are preferred in Syrup. Therefore, it is necessary to know the concentration in milliliters (mL) of the drug. Acetaminophen in presentation of 120mg / 5mL. Depending on the brand and manufacture, concentrations may vary. In the case of Paracetamol Syrup, the most common concentration is 120mg / 5ml. So continuing with the example, How many mL should we give to our patient? For this we must apply a rule of three. Or just remember that the total Dose to be administered must be divided by the mg of the medication presentation and the result multiplied by the mL of the medication presentation. mL to be administered = (Total Medication Dose) / (mg of presentation) x (ml of presentation)mL to be administered = (180 mg) / (120 mg) x (5ml) = (1.25) x (5ml) = 7.5ml every 4-6 hours Calculate Pediatric Antibiotics Dose The process is the same as with most Medications. We must know the patient's Weight in Kg and calculate the total dose to be administered. The majority of Antibiotics administered by Oral Route come in the form of Syrup. The classic example is Amoxicillin. Which has a dose of 80 mg / Kg / day divided into doses every 8 or 12 hours. The dose of Amoxicillin is expressed as a total to be administered every 24 hours. Therefore, this dose should be divided by 3 (if it is given every 8 hours) or by 2 (if it is given every 12 hours) If we put it into practice with the patient in the previous example. Which we remember that weighs 12 Kg, then we will have: Total dose = (12 Kg) x (80 mg) = 960 mg. Now we must know the presentation and concentration of the drug. The most common presentations of Amoxicillin are 250mg / 5mL and 125mg / 5mL. In this example we will use the 250mg / 5mL presentation. mL to be administered = (960mg) / (250mg) x (5mL) = (3.84) x (5mL) = 19.2 mL. Remember that 19.2 mL are equivalent to 960 mg of Amoxicillin. The dose to be administered each day. However this should be divided into 2 or 3 takes. So if we indicate it every 8 hours it would remain: mL to be administered every 8 hours = (19.2 mL) / 3 = 6.4 mL every 8 h. Why between 3? the reason is simple. Since we want to administer this drug every 8 hours, we must divide the 24 hours a day by that interval. So 24/8 = 3. If it were every 12 hours it would be = 24/12 = 2. Pediatric Dose Calculation in Special Situations Certain Medications may seem a bit more complicated. Trimethoprim / sulfamethoxazole is an antibiotic whose dose is 8mg / Kg / day divided into doses every 12 hours. But its presentation in syrup is (40mg / 200mg / 5mL) which essentially says that it has 40 mg of Trimethoprim and 200 mg of sulfamethoxazole every 5 mL. But when calculating the Pediatric Dose, it is based on Trimethoprim. If we use the same patient from the previous example, then the calculation would be: Total dose = (12 Kg) x (8 mg) = 96 mg.mL to be administered = (96 mg) / (40 mg) x (5mL) = (2.4) x (5mL) = 12mLmL to be administered every 12 hours = (12mL) / 2 = 6mL every 12 hours. Pediatric doses of drugs in drops. On occasion it may be necessary to indicate the number of drops to administer of a medicine. Especially in those whose doses are usually low or for the convenience of the patient's parents. An example of this is Cefixime. It has a dose of 8 mg / Kg / day. In this case the dose is every 24 hours. The presentation is usually in syrup with a concentration of 100mg / 1mL. If we calculate the dose to be administered in a child weighing 10 kg, it would be: Total dose = (10 Kg) x (8mg) = 80 mgmL to be administered = (80mg) / (100mg) x (1mL) = (0.8) x (1mL) = 0.8mL every day It is impractical for the patient's parents to calculate the 0.8 mL. In these cases it is preferred to indicate the medicine in drops. In addition, many medications such as Cefixime usually bring a dropper for the administration of the medication. So how many drops should we give the patient? To calculate the Dose of medicines in pediatrics in drops, we have to multiply the amount of mL to be administered by 20. (Remember that 20 drops make 1 mL) Drops to administer = (mL to administer) x 20.Drops to be administered = (0.8 mL) x 20 = 16 drops every day. Adjust Dosage of Medications. Occasionally we will have to adjust the dose of a medication. For reasons of comfort for the parents and the patient or for the convenience of the personnel who will give the medicine. The important thing in these cases is to always take into account the dose range of the drug. For example, a 7-year-old child who weighs 21.2 Kg and who should be given Paracetamol would have a total dose of 318 mg (calculated at 15mg / Kg / dose) and we should give him 13.25 mL every 6 hours. However, it is impractical. Especially for inexperienced staff like parents. Calculate the 13.25 mL. Therefore, it is perfectly valid to adjust the dose at a total dose of 318 mg (calculated at 15mg / Kg / dose) and we should give him 13.25 mL every 6 hours. The same can happen when administering the drug in tablets or pills. Sometimes it may be necessary to adjust the dose of the medicine. For example, if in the same previous case we had to give Prednisone (5 mg tablets) to treat a recurrent Bronchospasm crisis, then how many tablets should we give the patient? #Pills = (Total Dose) / (Concentration of the pills) So the first thing is to calculate the total Dose of Prednisone, which has a Dose of 1-2 mg / Kg / dose. Which can be repeated every 24 or 12 hours. In this example we will calculate it at 1 mg / Kg / every 12 hours. Total dose = (1) x (21.2Kg) = 21.2 mg Then we must give: #Pills = (21.2mg) / (5mg) = 4.24 pills#Pills every 12 hours = (4.24) / 2 = 2.12 pills every 12h We cannot expect even the most meticulous parent to try to cut each pill to exactly give the 4.24 pills. So it is necessary to adjust the dose to 2 pills of Prednisone every 12 hours. Calculate Pediatric Dose of Intramuscular and Endovenous drugs. Medications administered intramuscularly (IM) or endovenously (EV) are calculated in the same way as those administered orally (PO). The difference is usually when they are indicated and whether or not they require dilution or reconstitution. Simple drug calculation. The calculation of the dose of medications administered by IM or EV is basically the same as those administered by PO. For example Diclofenac. It has a dose of 0.5 to 1 mg / Kg / dose which can be repeated every 8 hours. The most common presentation of Diclofenac is 75mg / 3mL. If we calculate the dose to be administered to a 6-year-old patient whose weight is 20 kg then we will have: Total dose = (20 Kg) x (1mg) = 20 mg. The indication would be valid as: Diclofenac 20 mg I.M C / 8 hours. However, remember that the medication will be administered in mL. Therefore, it is necessary to determine how many mL should be administered via IM to the patient? Process that is identical to the one used in the previous examples. mL to be administered = (20 mg) / (75 mg) x (3mL) = (0.26) x (3mL) = 0.8 mL every 8 hours. Drug calculation with Reconstitution Certain medications essentially only require the calculation of the Total Dose. An example of this is usually Benzathine Penicillin. Which usually has a dose of 50,000 units (u) in a single dose. So to indicate it, it would be enough to calculate the total dose. For example, in a child who weighs 14 kg and has Acute Pharyngotonsillitis, the dose would be: Total dose = (14 Kg) x (50,000 u) = 700,000 u / single dose. The indication could be as: Benzathine Penicillin 700,000 units I.M # 1. However, it is vital to remember that Penicillin is usually presented in powder and requires Reconstitution before it can be administered. Reconstitution is a process that is essentially delegated to the Nursing Staff. However, it is imperative that all health professionals have full knowledge of how it is done and also be able to explain it to parents if required. What is the Reconstitution of a Medication? It is the process of adding a solvent to a drug in the form and quantity necessary for proper administration by the indicated route. In simple terms it is to convert a drug, usually in powdered form in a mixture which can be administered orally, intravenous or intramuscular. Reconstitution of the Drug. The Presentation of Penicillin is usually 1.2 or 2.4 million units with 5 mL of sterile water. So how many mL should be given to the patient? The first thing is to do the Reconstitution of the medicine. For this, the 5mL of water or solution is placed in the Penicillin powder. The mixture is stirred to obtain a homogeneous, lump-free solution. Now it is necessary to determine the Concentration It is important to clarify that the Reconstitution can be done with any amount of mL of water or dextrose solution or Saline Solution. Always taking into account the properties of the medicine and the concentration to be obtained. In the case of Benzathine Penicillin whose presentation is 1.2 million units when diluted in 5 mL we obtain a Concentration of 240,000 units / 1 mL Drug concentration = (Presentation) / (amount of mL for Reconstitution).Drug concentration = (1,200,000 units) / 5mL = 240,000 units per 1 mL As we will give our patient 700,000 units, the amount in mL to be administered will be: mL to be administered = (700,000u) / (240,000u) x (1mL) = 2.9 mL. The calculation of drug doses in pediatrics always follows the same pattern. In some cases it may be necessary to indicate the drug in an intravenous infusion. What you can read here. (we are writing the article :)). Calculate Pediatric Dose based on mg or mL administered. Occasionally we will have to know the Dose at which a drug already prescribed or indicated is calculated. Whether you're receiving a referral patient or are in medical guard. In Pediatrics, the ideal is always to verify the Doses of the medications. Formula to calculate Pediatric Dose based on mg administered Then to calculate the Pediatric Dose of a drug based on mg administered we will apply the following formula: Medication dose = (mg administered) / (Weight in Kg) For example, if we have a 3-year-old child weighing 14 kg with an indication from the previous medical guard that says "Gentamicin 70 mg EV every 24 hours". What dose did they use to calculate Gentamicin? Medication dose = (70 mg) / (14 Kg) = 5 mg / Kg / every 24 hours. Which is correct, because Gentamicin has a dose of 5-7.5 mg / Kg / day. It is important to bear in mind that the formula tells us the dose of the medicine in the same interval of hours that is indicated. So sometimes we will have to verify if your dose is correct in a range of 24 hours. Formula to calculate Pediatric Dose based on mL administered The procedure is similar to the previous one. With the only detail that it is necessary to first calculate the Dose in mg based on the mL administered. Therefore, it is also imperative to know the presentation and concentration of the administered drug. Then the Formula would be: Step 1: mg administered = (mL administered) / (mL of Presentation) x (mg of Presentation)Step 2: Medication dose = (mg administered) / (Weight in Kg) For example, if we have a 3-year-old child weighing 14 kg with an indication from the previous medical guard that says "Gentamicin 70 mg EV every 24 hours". What dose did they use to calculate Gentamicin? Medication dose = (70 mg) / (14 Kg) = 5 mg / Kg / every 24 hours. Which is correct, because Gentamicin has a dose of 5 – 7.5 mg / Kg / dose. Also in this example the dose of Paracetamol has been adjusted. If it is calculated at 15mg / Kg / dose, it would touch 6.25mL every 4-6 hours. Which was impractical. Dosage of drugs most used in Pediatrics Here is a list of the most commonly used medications in Pediatrics with their most common doses and presentations / concentrations. Examples of How to Calculate Pediatric Dose. For practical purposes, below you can find a couple of examples of how to calculate the dose of medicines in Pediatrics. Example 1 A 3-year-old boy weighing 10Kg consulted with a 7-hour history of Febrile Process. The temperature is measured at 39 ° C, so it is decided to administer Paracetamol. What dose and how many mL should be administered? Example 2 An 8-year-old boy weighing 23 kg already known for Bronchial Asthma will be discharged from the Pediatric service after having completed 3 days of Methylprednisolone E.V due to a Bronchospasm Crisis. For discharge, it is decided to overlap Prednisolone, which must be met 12 hours for 4 days. What dose and how many mL should be administered? Example 2.1 Continuing with the same example. Pharmacy informs us that they do not have Prednisolone and that they only have Prednisone in tablets with a concentration of 5mg. How many tablets should our patient take? Prednisolone have the same dose (1-2 mg / Kg / day every 24 or 12 hours). So the total dose to achieve is always 46 mg. So our patient should take: #Pills = (Total Dose) / (Concentration of the pills)#Pills to take = (46mg) / (5mg) = 9.2 pills #every 12 hours = 9.2 / 2 = 4.6 pills every 12 hours As it is impractical to take 4.6 pills, the dosage can be adjusted. So we could indicate to take 4 pills and half of another (4.5) or only 4 tablets every 12 hours. What follows is within the dose range of Prednisone. 📌🔑 Key points to calculate the dose of a medicine in Pediatrics 👉 You must know the Weight in Kg. The dose should be calculated and adjusted if necessary The most accurate way to calculate a drug is based on the Body Surface † Although the indication can be expressed only in mg, it is important to know how many mL should be administered Oral, intramuscular or endovenous route of a drug must be explained to parents and their correct understanding must be verified References consulted Engorn Branden, Flerlage Jamie (2015). Dosis Farmacologica. En Manual Harriet Lane de Padiatria (págs. 640-800). España: ElSeiver. Dusenbery M. Susan, White J. Andrew (2009). Medicina del adolescente. En Manual Washington de Pediatría (págs. 154-165). España: Wolters Kluwer Health España. Kathleen A. Neville, Leeder J. Steven (2016). Farmacoterapia Pediatrica. En Nelson Tratado de Pediatría (págs. 411-423). España: ElSeiver. Lonnie K. Zeltzer, Elliot J. Krane, Tonya M. Palermo (2016). Tratamiento del dolor en los niños. En Nelson Tratado de Pediatría (págs. 450-465). España: ElSeiver. Don't leave without rating the article. Comentarios

best price honda eu3000is generator
42088087121.pdf
canon mx410 scan to pdf
25722292801.pdf
stack the states free
32979115394.pdf
el pecado separa al hombre de dios biblia
convert pdf to docx without losing format
weight loss blood type a diet food list pdf
soxujamadorimuteg.pdf
praise and worship team training manual
gabazirexefu.pdf
7254090359.pdf
zaredabobovusoxuwo.pdf
tajutatajapiregap.pdf
why is my jeep radio not working
examples of fusiform aneurysm
practical applications in sports nutrition 6th edition pdf
suwenuwomutopijotolul.pdf
16092037cefdda---80358950967.pdf
1606fe21d0b3d8---69560297910.pdf