

>> Diane Jewell: A pill contains 800 milligrams per tablet. To limit your intake to 7.2 grams per week, what is the maximum number of pills you should take in a week? Okay, so I put 3 pieces of information down. We have 800 milligrams per tablet. The maximum you should take in a week is 7.2 grams. And well, you don't really know how much that is. What you need to know is how many tablets can you take. So that's what you're looking for. So just by looking at this step, you can say, okay, here's my starting point because grams is something that has a number attached to it that we can start with. We want to know how many tablets we're going to end with so our ending units are going to be tablets. And this 800 milligrams per tablet, we're going to use that as a conversion factor. Now you may be asking how do I know which one to use as a conversion factor. Think back on what we said about conversion factors. Conversion factors compare 2 units. In this case, we're comparing milligrams to the number of tablets. There's only 1 unit here and that's grams. So that can't be a conversion but this is. Okay, so we do have this. Now take a look at what else we have. This is in units of milligrams but we're starting in units of grams. So is there something else we know that can help us? Well yeah, we know that 1000 milligrams equals 1 gram. So what can we do with that equality? We can create 2 conversion factors and then decide which one we're going to use. By using one of these conversion factors, we can change from grams to milligrams. Okay? Once we change to milligrams, look what we can compare. Milligrams to tablets. At that point now, we can take – For our second step, we can take 800 milligrams in 1 tablet, flip it over and we have our second choice of our conversion factor of 1 tablet is 800 milligrams. So here's our plan. We're starting with grams. Using one of these conversion factors in the first step, we're going to change it to milligrams. Using one of these conversion factors in the second step, we're going to change it to number of tablets. So let's go ahead and do that now. Starting with our 7.2 grams, we want to get rid of grams. Grams is on top. We've got to put grams on the bottom. And here you can see, right here. Okay, we have 1000 milligrams over 1 gram. Grams are going to cancel out. Leaving us in the numerator with the unit we want, which is milligrams. So 7.2 times 1000 is 7200 milligrams. Now we're going to do step 2 going on milligrams to tablets. We have to choose which one we're going to use. So go ahead and set up again; 7200 milligrams, we want to end up with tablets. So which of these 2 do we have to use? Well, this one gives us tablets in the numerator which we want. It also gives us milligrams in the denominator, which would cancel this. Therefore, we're going to use this form, this conversion factor, 1 tablet over 800 milligrams. Milligrams will cancel; 7200 divided by 800 gives us 9 and our units are tablets. So we can use up to 9 tablets in 1 week.