-Hi. Today we're going to talk about WASH, and WASH is one of my favorite acronyms. It stands for water, sanitation, and hygiene. And to some people these subjects sound a bit boring. They seldom get the big headlines in media. But let me try to convince you how important WASH is.

Last year, when I was working in West Africa with the Ebola epidemic, we washed and washed our hands all the time to reduce the risk of getting or spreading Ebola. One of the side effects was that I have never been so healthy in my whole life. It was not only me washing my hands all the time, not only with soap but with chlorine as well, but also those around me.

And when everyone was washing their hands all the time, just no one of us got sick. Handwashing with soap is the single most cost-effective health intervention that we know of. And still, many of us, even if we know this, we forget to wash our hands when we should wash our hands. We forget it even in important moments like after having been to the toilet or before preparing food. And when we forget, we spread viruses and bacteria from our hands.

So just simple handwashing with soap and water can reduce diarrheal diseases by 50% and respiratory diseases by 25%. That's pretty amazing. So there are many programs and strategies aiming at teaching hand washing in schools to make it a habit from early age. And some of my favorite strategies are the handwashing songs trying to make it fun to wash hands for kids. If you look them up on YouTube, you will find several of them.

The reality is, though, that many schools and health care facilities in especially sub-Saharan Africa still lack basic water and sanitation facilities to use to wash hands. And the WHO estimates that for every dollar invested in improved water and sanitation, you get $5 back in reduced health care costs. For $1 invested in that water and sanitation, you get $5 back.

Water needs to be safe, clean, affordable, and close by. As with food, water is first a problem of quantity and then a problem of quality.

Still today, according to WHO and UNICEF, almost 700 million people-- that's every 10th person on this planet-- lack access to improved drinking water sources. And improved drinking water source, that means water that is protected from contamination from outside.

On the other hand, 2.3 billion people have gained access to improved drinking water since 1990. That's an amazing achievement. Most of those who still use unimproved water sources, for example surface water, they live in rural areas. And almost everyone living in cities nowadays have access to improved water sources like different types of taps or wells.

Surface water, that's water taken directly from rivers or lakes, and it's particularly dangerous since it can contain waste and germs from both humans and animals, and in that way cause disease. And some water-borne diseases like cholera, hepatitis, and typhoid can in no time cause big disease outbreaks with fatal outcomes.

So imagine you need those 20 liters of water for one person every day, and imagine the closest water point is 20 kilometers away. You have a family of eight people. How many times, and how much time, will you have to walk back and forth through the water point with your 20-liter jerry can to provide for your family? That's a lot of time. It's a whole day that will just go to find enough water for your family.

Let's talk about toilets instead. Did you know that there are still one billion people in the world who practice open defecation? With open defecation, the risk of bacteria from one person's poo ending up in his or her neighbor's food is huge, and it's a common way of spreading diseases.

The share of people worldwide who actually do practice open defecation has decreased by half from 1991-- it was 25%-- to about 13% in 2015. Another billion people, though, don't have access to improved latrines. That's one billion people who practice open defecation and one billion people extra who don't have access to improved latrines.

An improved latrine, or improved sanitation, is some form of toilet where the human excreta-- the human poo-- is separated from humans and thus cannot spread diseases. So getting improved latrines out there to everyone is lagging behind because they are a bit difficult to build technically.

What do you need, by the way, to build the perfect toilet? A toilet needs, first of all, to separate poo from human contact to avoid disease transmission. It also needs to provide privacy so that people can use toilets with dignity. And finally, comfort so that people will want to use them.

If you provide these things, you will get many things for free. Like getting rid of the smell and the flies when you isolate the poo. And you will get more girls in school if they have somewhere safe to go to the toilet. And there's no coincidence that the Indian Prime Minister Modi has talked about separate toilets for girls as a way to reduce the number of rapes.

When people don't have toilets nearby in a safe location, then they will have to walk somewhere to find privacy, maybe in a field or in a forest, and are at greater risk of being raped. So safe location, if possible, even without adequate lighting will reduce the number of rapes. You hadn't thought about that, had you?

So human excreta, or human poo-- it's difficult to find a proper word-- can be taken care of in either so-called on-site solutions or off-site solutions. Off-site solutions include sewerage, piping-- like we have in most big cities

where we have a lot of people living at the same place-- and are quite expensive to build. But they are very effective in separating poo from people.

In areas with fewer people, it is more common with on-site solutions that can be just as effective as the off-site solutions and cheaper. We have, for example, the ventilated improved pit latrine-- the VIP latrine-- we have double vault composting latrines, we have the septic tank latrines, and these are less expensive solutions but have still not reached all rural corners in low and middle-income countries since it does take some technology and it does take some resources to build them.

So let's say you have two choices. Either you have two liters of clean water every day-- two liters-- you remember you have to have 20 liters per day, right? But you have two liters of clean drinking water every day, or you have access to the village pond with water that is not always very clean. So either two liters of clean drinking water a day or as much water as you want from the village pond, and this is the only water as you will get for one month.

After that month, what diseases will you have? Well, if you have access to the village pond with as much water as you want, but it may be dirty, then you will be quite clean on the outside because you can wash your clothes, you can wash your body, and you can keep your hygiene. But from drinking dirty water, you will get disease on the inside like diarrhea.

On the other hand, if you have access to clean drinking water, with two liters you will survive. On the other hand, you will get diseases on the outside of the body like infected wounds and other diseases that you get when you cannot keep up your hygiene.

It is estimated that almost one million people die every year because of inadequate water, sanitation, and hygiene. The majority of these deaths are because of diarrheal diseases, but poor sanitation also contributes to deaths and diseases caused by neglected tropical diseases.

We have intestinal worms, bilharzia, and trachoma. And not only does poor sanitation cause diseases in humans, it is also a heavy burden for the environment. The vast improvements in water, hygiene, and sanitation that we actually have seen since 1990 mean that the number of children dying from diarrheal diseases have decreased from 1.5 million per year to 600,000 per year.

There's still a long way to go-- 600,000 children per year is a lot of children-- but we are on the right track. And I hope that from now on you will never, ever miss again the World Water Day on March 22nd or the Global Handwashing Day on October 15th or the World Toilet Day on November 19th. Will you? Thanks.