Marcello Tonelli
If I were a large employer and the percentage of people in my workforce that apparently had kidney disease was 5 or 6 percent, I would think, wow, I'm under testing. I've got to test more people and find it. It's unlikely that 5 or 6 percent of your workforce really has kidney disease. It's more likely that you're missing half the cases. So I would use that metric as an opportunity to gauge the missed opportunities for testing and maybe a call to increase testing, rather than a reassurance that our workforce was very healthy.

LuAnn Heinen
That's Dr. Marcello Tonelli, president of the International Society of Nephrology. Today, we're talking about why chronic kidney disease remains such a persistent blind spot and how simple steps such as earlier action and smarter screening can make an enormous difference.

I'm LuAnn Heinen, and this is the Business Group on Health podcast, conversations with experts on the most relevant health and well-being issues facing employers.

Chronic kidney disease affects an estimated one in seven American adults, with as many as nine in ten not knowing they have it. Yet earlier detection can significantly slow progression and improve outcomes.

Marcello Tonelli, president of the International Society of Nephrology, welcome to the podcast.

Marcello Tonelli
Thanks very much for having me.

LuAnn Heinen
I'm going to speculate that most of us haven't thought about our kidneys much or at all. So let's start with why does kidney health matter?

Marcello Tonelli
Your audience is not alone in having given the kidneys not very much thought. Kidneys are the unsung heroes, we call them the master chemists. Together, they process between about 150 and 200 liters of blood a day. They are filters, they remove poisons from the blood, but they have many other functions. They regulate blood pressure, they produce important hormones, and they generally keep the working systems of the body in good order. On the other hand, when these silent heroes stop working, patients can become very sick because many other organs can be affected.

LuAnn Heinen
Well, what exactly do we mean by kidney disease? Let's also talk about how it progresses.

Marcello Tonelli
Kidney disease is a basket of different illnesses, they can be affected in many different ways. Although the most common causes are diabetes and high blood pressure, there is a long list of diseases that can affect the kidneys. What we mean by chronic kidney disease is kidney damage that's been present for at least three months, leading to reduced filtering capacity of the kidneys themselves. We can assess kidney function using blood tests and urine tests. The blood is filtered by the kidneys together, excess fluid is removed in the form of urine, and then, as we all know, in that urine are various poisons that your body normally produces and they're removed by this filtering process. On the other hand, when the filtering rate decreases, the first thing that happens is those poisons can build up in the body, and the second thing is that in the later stages of disease, people can have an excess of fluid, which leads to swelling or maybe fluid on the lungs.

LuAnn Heinen
What would be an example of poisons building up that need to get filtered out? How does our body get them in the first place that we need them filtered?

Marcello Tonelli
Interestingly, there's a long list of hundreds of toxins that accumulate. We gauge the level of those other toxins by measuring one, serum creatinine, and that's the most commonly used blood test. The toxins themselves, as I say there's a long list, and they just come from our normal metabolism. The normal way that our body works, breaks down things we eat or things that we ingest by other means, turns them into these waste products that can be safely excreted in urine.

LuAnn Heinen
We've read that chronic kidney disease affects some 37 million U.S. adults. It seems hard to believe, but 90% of those may be unaware that they have the condition.

Marcello Tonelli
Yeah, those are as good numbers as anything else. Worldwide, we know that about 850 million people, or about one in ten of us, are affected by kidney disease. And worldwide, less than 10% are aware that they're affected. Even in wealthy countries like the United States and Canada, the number of people who know and are acting on the fact that they have kidney disease is about one in ten. So that leaves a lot of room for improvement.

LuAnn Heinen
That seems like a huge miss. With all of the health care that gets delivered, how can people not know they have something that could become deadly?

Marcello Tonelli
Surprisingly, or maybe not surprisingly, the reason that most people don't know that they're affected is that they haven't been tested or they've been incompletely tested. We assess for kidney damage using blood tests and urine tests. In most cases, people who've had a blood test showing that they have kidney disease or an early stage of kidney disease, they haven't had that second test to examine the extent to which protein is appearing in the urine. I should mention that the kidneys normally don't spill protein into the urine. Normally, the kidneys deal with the protein. They keep that protein and resorb it, keeping it in the body where it belongs, and as the filter grows a little more porous because it's been damaged, some of that protein leaks out into the urine. Initially, that's in very small amounts and it requires a specific urine test to detect it, but that could be one of the first warning signs.

LuAnn Heinen
When I go to the internist every year, I get a blood panel, a blood draw. I haven't had a urine test since I was pregnant.

Marcello Tonelli
That isn't an unusual story. A lot of the time people do have blood tests and they don't have urine tests. We know that in order to detect kidney disease, both tests are required together. It does make sense if someone is going to have their kidney function test by way of a blood test, that the urine test would also be checked at least occasionally. Now, that doesn't mean you need to have urine checked every time you have a blood test, but if you haven't had a urine test done in some years, and you are seeing the internist and you are having your kidney function test, it would make sense that you would have had your urine tested along the way.

LuAnn Heinen
How does kidney disease progress and can you give just a recap of what stages are and when it becomes irreversible?

Marcello Tonelli
When we talk about chronic kidney disease, there's a whole other family of kidney diseases called acute kidney disease, which can happen when a person is ill with another problem. For example, someone that has a life-threatening infection often will have acute kidney disease. We'll leave that aside for now because it often recovers when the underlying problem is fixed. But if we think about chronic kidney disease, what we're talking about is sustained kidney damage, present for three or more months, leading to that reduced filtering capacity, and often those signs of protein spilled into the urine. We classify kidney function in

stages based on the severity of kidney impairment. Stages one and two, there may simply be albumin in the urine, protein in the urine, with a normal filtering capacity. Then as we move into stage three, that's where the filtering capacity is reduced. There's a test we use called glomerular filtration rate, or eGFR, and you can think of that as kind of like a percentage of normal. Stage three begins when eGFR is at about 60% of normal. That continues down to the beginning of stage four, which is when the GFR is between 30 and 15. Once the GFR falls below 15, below 15% of normal, we talk about kidney failure being present and that is when a person may begin to start thinking about the need for dialysis or for a kidney transplant. Now the key thing to understand about kidney disease is that the rate of progression can be very variable. Some people have fast progression, whereas others' progression may be slow over years. The other thing to know is that kidney disease typically doesn't have any symptoms until the later stages. That's the second reason why so many are unrecognized, coming back to your earlier question. Some people are not being tested and in the absence of testing, because it's asymptomatic typically, people don't have a reason to know they're affected.

LuAnn Heinen
So younger people, are they as prone to this problem as aging adults?

Marcello Tonelli
Kidney disease is certainly more common in older adults. There's a pretty straight line between the age of a person and their underlying risk. People can be affected at any age, depending on the cause. For example, a person with diabetes or a person with high blood pressure, a person with a strong family history of kidney disease, all those people could have kidney disease at any age. But in general, it's an age-related condition and so the priorities for testing in a healthy person begins at older ages.

LuAnn Heinen
I do gather that there's a connection between high blood pressure and kidney disease and high blood pressure is also silent. People get their blood pressure checked when they're in the doctor's office, rarely.

Marcello Tonelli
Yeah, this is one of the issues. In a perfect world where resources and time were not a consideration, it might make sense to check everyone periodically for kidney disease. We don't actually know that checking everyone, checking for example a healthy, apparently healthy 18-year-old for kidney disease, we don't know that that makes sense. What we do know is that the more risk factors you have for kidney disease, the higher the priority and the higher priority to be tested, both blood and urine tests. People with diabetes should be checked every year for signs of kidney disease with both blood and urine tests. People with high blood pressure might not need to be every year, although there could be benefit to checking every year, but at least every two or three years makes sense in that setting. And when a person has multiple risk factors, diabetes and high blood pressure both, maybe they have heart disease or heart failure, those are also conditions where kidney function, both blood and urine tests should be checked regularly.

LuAnn Heinen
What about, let's say, no diabetes or high blood pressure, but say struggling with obesity?

Marcello Tonelli
Obesity is certainly a risk factor for kidney disease and that people with obesity are at higher risk. It's a bit of a gray zone in terms of how regularly people with obesity and no other health issues should be checked, but again, it does make sense to check people occasionally. At this point in time, under testing is the biggest issue, but we also have to be sure that we don't replace that under testing with testing people too frequently, which might not be necessary either. Most people are kind of in the same basket you're in. They haven't been thoroughly checked ever or haven't been thoroughly checked in recent years, and that's the main problem to solve now.

LuAnn Heinen
Just to go back to the staging, this needs to be found and identified and treated before what stage?

Marcello Tonelli
By the time kidney disease reaches stage four, that is when the majority of kidney function has already been lost, so it's always better to catch it at an earlier stage. If you catch someone in stage one or two when they just have albumin in the urine but the filtering capacity has been preserved, there's more kidney function to save. So it's always better to start sooner than later. That is why we need both blood and urine tests, because a person could have preserved filtering capacity but could have protein in the urine, albuminuria, that would be a good time to intervene before the kidney function has been lost.

LuAnn Heinen
That's lost in stage five, I gather.

Marcello Tonelli
Well, it's lost all the way along, so as we move from stage one to two where the kidney function is normal or nearly normal, so say 75%, 80% of normal, that's still preserved. Once we get to stage three and it's 60%, 30 to 60%, kidney function has been lost, and so we want to preserve what's left. But there is more kidney function there than someone with kidney failure. So kidney function is lost all along the way as we progress from stage one to two to three to four and on to kidney failure. Kidney function is being lost at every stage.

LuAnn Heinen
Is there a new understanding of this that's led to some of the recent headlines? So we saw from the *Journal of Internal Medicine*, silent pandemic headline, or from *Scientific American*, distressing rise in kidney disease. *ScienceDaily* says, silent kidney crisis spreading faster than anyone expected. What led to those headlines?

Marcello Tonelli
Well, kidney disease hasn't been spreading faster than kidney specialists expected. I think what has changed is there is an increasing understanding that kidney disease is not just about kidney failure. It's not just about dialysis and kidney transplantation and it's a recognition that there are opportunities to intervene sooner and prevent those costly, dangerous complications. For example, when I went to the WHO as a volunteer about 12 years ago, they told me before I came, we are not interested in kidney disease. It is a disease of rich countries. Now, if we fast forward 12 years, the WHO is very interested in kidney disease and in some ways leading efforts to fight it in lower-income countries. So I would say it's a combination of two or three things - the first is increased awareness; the second is a better understanding that early intervention saves money, saves lives, prevents death and disability; and the third is that we have now more tools and medications to treat earlier forms of kidney disease than we ever did before.

LuAnn Heinen
Well, it's been said that you never want a good crisis to go to waste. So in the current crisis, where do you see opportunity?

Marcello Tonelli
I think the major opportunity is for us to integrate kidney care into the good work that's already being done. A lot of the pathways that will make the biggest difference around the world are already in place. People know that patients with diabetes are at risk for vascular disease. As an example, what we need to do is to piggyback in that urine testing, make sure that every person with diabetes has their urine tested, and make sure that we deploy all of the effective medications that help people with diabetes help their hearts, they will also help the kidneys. The same is true for people with high blood pressure. The same is true for people with heart disease. It's that opportunity to integrate kidney disease testing and care into the work that's already being done in primary care settings. That I think is the biggest opportunity for this crisis.

LuAnn Heinen
As a nephrologist, you are sort of a resource and a consultant to primary care when it comes to kidney health and care. Is that how you'd put it? Because there probably aren't enough nephrologists to see all the people with serious kidney disease.

Marcello Tonelli
No, there certainly are not. Globally, there's only about 10 nephrologists for every million population, even in high income countries like Canada and the U.S. is something like 20 to 25. Then in low-income countries, it's maybe as low as point two or less than one nephrologist for 3 or 4 million people. Nephrologists are not going to solve this problem on our own. We are needed to look after people with rare kidney diseases and we're needed to look after people with kidney failure or close to kidney failure. What we can do is partner with primary care practitioners, with diabetes physicians like endocrinologists, and with heart specialists. Together we can support primary care to look after people that have kidney disease alone or have kidney disease together with diabetes or heart disease.

LuAnn Heinen
Are there any specific recommendations you'd make as far as what we need to change to support early detection and treatment? I know you're Canadian based, but you're a little bit familiar with what goes on globally. Any thoughts for us in the U.S.?

Marcello Tonelli
The major issues are to work on integration. The American Heart Association, their leadership on cardio kidney metabolic syndrome is very helpful. It reminds primary care practitioners and the other specialists involved that testing for kidney disease, piggybacking that on top of what's already being done is a key start. Diabetes specialists already understand very well what needs to be done for people that have diabetes and kidney disease and our job is for nephrologists and diabetes specialists together to help support primary care practitioners in delivering that care, these newer medications. Similar things are true with our work with the heart specialists. The heart specialists are also aware of the importance of kidney disease. That's why they've coined this phrase, CKM. And we have to help support them by creating clear referral pathways so that patients that the cardiologist can't manage, when should a cardiologist refer? When should a primary care physician refer to a nephrologist to get that specialized care? Overall though, I think a couple of things I would say. Worldwide coverage, not just education, but coverage, access and availability of urine protein, urine albumin testing is low. It's lower than it should be. We need to remove barriers to getting that testing done. One of the challenges is it's another specimen. And like you mentioned yourself, when you go to see your internist, a blood specimen is taken. In order to check that urine for albumin, you have to provide a urine sample. That's going to be a change for laboratories. It's going to be a change for practitioners to remember to take that urine form. So that's number one. It's workflow. It's about integrating that urine testing along. The second is about making medications that we know save lives and save kidneys, making them available to patients. That will require changes in coverage. Now you've heard the term penny wise pound foolish, and that is what health systems around the world, not just the United States, not just Canada, but around the world, that's the boat that we're all in. We are seeing countries like our governments funding dialysis, but not funding these medications that will keep people off dialysis and keep them healthy. So that's the second thing is removing those barriers. I know that your audience includes many employers. I would say, listen, if you get things right, you're going to see increased expenditure on these medications, and that's a good thing. So watch for that, but don't see it as a cost center that needs to be controlled. Celebrate it because these medications are highly cost effective and they're going to save you as an employer money down the road by avoiding serious illness for your employees.

LuAnn Heinen
What kinds of medications are we talking about here?

Marcello Tonelli
There are some older medications that we need to keep deploying. These are blood pressure medications called ACE inhibitors or angiotensin receptor blockers. We need to keep giving those. By and large, those are covered. SGLT2 inhibitors that, as many of you know, were originally simply for diabetes, they remain important for diabetes, but they also can control kidney disease in many forms, even in people that don't have diabetes. GLP-1 receptor antagonists like semaglutide, already well known to your listeners from their obesity effects and their effects in diabetes. We also think that these medications have strong direct kidney protective effects as well. And finally, the fourth so-called pillar, especially for people with diabetes, drugs like finerenone. They're non-steroidal mineralocorticoid receptor antagonists, they're called, so finerenone. These are also drugs that don't just protect the heart, but also protect the kidney. We need

cocktails, combinations of drugs that work together for the benefit of patients. What we're seeing is plans typically cover one or two of these drugs, but they don't cover all of them. Without those drugs being covered, it's very challenging for physicians to deploy them and for patients to access them. I really want to emphasize again, that that's where we want to go, not just to better coverage and removing those financial barriers, but getting on with the hard work of once those barriers have been removed, how to get them into the hands of patients.

LuAnn Heinen
Employers really do have a stake in this condition and preventing it from a cost standpoint, as you point out, and certainly productivity with all the time it takes to care for dialysis sessions and so on. Of course, in the U.S., employers pay for their employees under age 65 until they either age into Medicare or have been on kidney replacement therapy for like 33 months or get a transplant.

Marcello Tonelli
I do know at a high level that employers are on the hook for a lot of these costs and that they're on the hook for costs related to dialysis, especially in the first few months. What I would say to employers is that a lot of these are easy to track. If you look at your employees who have diabetes, it shouldn't be too difficult to see how many have been tested with blood and urine at an aggregate level. It shouldn't be too difficult to see of those who have abnormalities, how many are receiving two, three or four of these beneficial medications. Those are early warning signs for you. Find it, ramp up the testing. Two, act early, make sure that you're providing adequate treatments for the patients who are affected. And three, measure it and feed that back. There are diseases where it's harder. You know, cancer screening is more challenging. This is not nearly as difficult. It's very quantitative. It's easy to define who's been tested or not and it should be relatively easy to increase those testing rates if we only take concerted action.

LuAnn Heinen
The urine test you're talking about is the uACR, correct?

Marcello Tonelli
That's right, the urine albumin-to-creatinine ratio. It doesn't require a 24-hour collection. From the patient's perspective, it's just like a urinalysis. Pee in a cup. The test is a little bit more sophisticated. It costs a little bit more than the standard tests that used to be done, for example, in pregnancy and so on, but it's still a very low-cost, low-tech test.

LuAnn Heinen
The big takeaway for companies with large populations is the role and the importance of this test, this urine test, the uACR, and the right medications on the formulary.

Marcello Tonelli
Yeah, that's right. I think those are really the two take-home messages. The trap that sometimes organizations fall into is they promote only testing and not that second component. Testing someone obviously doesn't help them. You need to link that to effective treatment. I don't want to minimize the challenges involved. If it were easy, it would already have been done. But it starts with that measurement, that commitment to action, and removing that first obvious barrier of cost. Without removing the financial barriers, people aren't going to get started. We will need to couple it with other efforts and it is going to require a sustained effort, but the payoff is potentially huge, and so we have to get started as soon as we can.

LuAnn Heinen
Have you seen KD or chronic kidney disease screening as a quality metric for PCPs in this country or elsewhere?

Marcello Tonelli
It certainly is a quality metric in some countries. I think being careful about terminology, screening could mean that we're testing everyone based on their age, for example, testing everyone over the age of 50. I don't think that we're there yet. I definitely wouldn't advise that as a quality metric. However, on the other end of the scale, testing people with diabetes, we must be testing those people with ACR. That would be

highly suitable as a quality metric. The proportion of people tested, let's say every year, every two years, that would be highly suitable for tracking and potentially for linking pay for performance. I always like the idea of coupling metrics, so the proportion tested and the proportion receiving treatment. You're never going to get 100% of people who have an indication on treatment, but you can certainly aim for 80% and set that as a metric, as a general rule of thumb.

LuAnn Heinen
It could work for PCPs and specialists who are following diabetes and hypertension as well, I guess.

Marcello Tonelli
Definitely.

LuAnn Heinen
What's your thought about centers of excellence, which are pretty widely used here in the U.S. by large employers?

Marcello Tonelli
There's a lot of variability between centers in a way that we don't have in Canada. We have a smaller number of centers, higher volume centers typically, so we don't have that same extent of variability. What I do know about U.S.-based centers of excellence, they do have better outcomes typically. They do have better access to organs through various mechanisms. I imagine that if I lived in the United States, I would try and be affiliated with a center of excellence. If I needed care, I'd probably go to one. I think it does make sense for employers. What I understand about your listeners is that they may work in other countries as well. I think there, it definitely makes sense to understand the landscape and determine where the top centers are, whether their brand is a center of excellence or something else, figure out which are going to be the centers that are going to provide good access to transplantation. I think the same applies for dialysis. U.S.-based outcomes for U.S.-based dialysis, very costly, relatively poor outcomes on a global basis. I think trying to understand that as well, promoting the use of home dialysis, which is better for patients, typically lower cost, might be associated with lower employer expenses. If I were a U.S.-based employer with some clout, I would probably be pushing on that just as much as on transplantation. We want to get people onto transplantation, but we know there aren't enough organs to go around, and so people will need to depend on dialysis. In-center dialysis, dominated as it is by two chains in the U.S. market, both for profit, is not an ideal situation for patients or employers that are paying the bills of those patients. I would be pushing for expanded access to home dialysis, and if I were a major payer, I'd also be pushing a little bit on those chains to understand what I was getting for the money I was paying.

LuAnn Heinen
I think only one in three candidates for dialysis live in an area with an alternative.

Marcello Tonelli
I'm not surprised to hear that. If I were a dialysis company, I would not necessarily be rushing to compete with the major other incumbent and I might divide and conquer the territory. Globally, there's tremendous variation in the risk of kidney disease, the types of kidney disease, the types of people that are affected. So if I were an employer, I'd be thinking about what is my risk, depending on where my major operations are, and I'd be trying to support prevention disproportionately in higher risk markets. There's even more of a payoff in areas where the risk of kidney disease is highest. Often that goes with less access to kidney replacement like dialysis or transplantation. So I'd be looking to understand what my risk was, how it varied across my geographic footprint and trying to link that. The principles are the same, test people, get them on treatment, but try to understand how risk lined up with availability of preventive treatments and how that linked to downstream options like dialysis, like home dialysis, like kidney transplantation, if kidney failure were to occur.

LuAnn Heinen
Can you tell us what some of the higher risk markets might be?

Marcello Tonelli
Central America is an area in Latin America generally, but especially Central America, where kidney disease of unknown origin can occur. Unlike the U.S. and Canada, where most patients starting dialysis have an identified risk factor like diabetes or high blood pressure, in Latin America, Central America, there's a higher proportion of kidney disease occurring in younger working age people that don't seem to have a risk factor. That's an example of an area where the risks might be different. They might be in a different population and they might be in people who are apparently healthier. In Latin America, for example, it might make more sense to test a broader range of people, even those without traditional risk factors. Other high-risk populations would include India, where there's a high percentage of people that have diabetes and so on. Those are two of the high-risk markets that come to mind. But increasingly, this is a global disease that's affecting all populations and that is why we've had some of the headlines that we've had in *Scientific American* and others.

LuAnn Heinen
Yeah. So Latin America would include Mexico, but Central America, you're saying, is even higher risk.

Marcello Tonelli
Yes. Mexico has a very high burden of kidney disease. It has a slightly lower burden of these unknown cases. There are a lot of diabetic kidney disease in Mexico. As we move further into Central America, the likelihood of these unknown origins may be more common. Similarly, in India, there's a high percentage of diabetes and diabetic kidney disease and less kidney disease of unknown origin. But if we move into other countries in that part of the world, like Sri Lanka, there's still diabetic kidney disease, but there's also a lot more of this unknown kidney disease, kidney disease of unknown etiology. So there again, in Sri Lanka, you may need a broader testing frame than you do in India.

LuAnn Heinen
A lot of heart disease in India as well. What was it I read about kidney disease being poison for the heart?

Marcello Tonelli
There's a strong association between heart disease and kidney disease. It cuts both ways. Heart disease can cause kidney disease and kidney disease can cause heart disease. What it means for the patient is that if you have one, you're at risk for the other. There are different reasons for that and it includes the fact that they have common causes. Diabetes can affect the heart and it can also affect the kidneys. On the other hand, if you have kidney disease, you may be more prone, for example, to have high blood pressure, to have low-grade inflammation or other risk factors that may cause heart damage. It's what we call a bidirectional relationship. Again, for the patient, for the physician, all it means is that where you find one, you often have the other. That's why the cardio kidney metabolic paradigm makes so much sense, because we want to test patients affected by one or two of these diseases for all three. Like if you don't measure these things, you're not going to find it. Because kidney disease is silent, one of the things that we think about is, if you look in your population and you're like, oh, only 3% of my people have kidney disease, well, that means you didn't look for it. There's no way you only have 3% of people with kidney disease. It's got to be 7%, 8%, 9%, 10%. But it means that you're missing a chance at detection.

LuAnn Heinen
Well, can you estimate for, let's say, a large employee population, what percent is likely to have kidney disease?

Marcello Tonelli
That's a great question and it definitely depends on where in the world one is talking about and the age of one's workforce, because there's such a strong relationship between age and the presence of kidney disease. What I would say is that because of low testing rates, because this is an asymptomatic disease, sometimes a low prevalence of kidney disease, meaning you have a low, apparently low proportion in your workforce, is actually showing you're under testing. If I were a large employer and the percentage of people in my workforce that apparently had kidney disease was 5% or 6%, I would think, wow, I'm under testing. I got to test more people and find it. It's unlikely that 5% or 6% of your workforce really has kidney disease. It's more likely that you're missing half the cases. I would use that metric as an opportunity to

gauge the missed opportunities for testing and maybe a call to increase testing rather than a reassurance that our workforce was very healthy.

LuAnn Heinen
That's a great tip. That's a great suggestion. While we're talking about tips, I've got a couple questions. One is, can overdoing dietary protein lead to a kidney problem?

Marcello Tonelli
In rare cases an excess protein intake can cause problems with the kidney. We know that in people that have established kidney disease, they should eat protein in moderation. What I mean by excess protein intake, occasionally one will see a bodybuilder or someone who's taking a lot of protein or creatine supplements for their own reasons. In some circumstances that can cause or exacerbate kidney disease. It's not a major driver or a major cause of kidney disease on the population level. As I'd say, if someone has kidney disease, they know about it, they should talk to their dietician or their kidney specialist about how much protein is right for them.

LuAnn Heinen
Can too much hydration be a problem? I know you need to hydrate to prevent kidney stones, but does too much hydration wear out the filtering of your kidneys.

Marcello Tonelli
Avoiding dehydration is important. We know that in some of these hotter settings like Sri Lanka or in Central American settings that being dehydrated, for example, people that work in hot conditions are maybe bad for the kidney, maybe harmful. In general, most of us drinking more water isn't going to help. I always say, drink when you're thirsty, drink water and not a salty drink, not a sugary drink, but I don't think there's otherwise any special considerations.

LuAnn Heinen
Any other things we should know over the counter meds or anything that we might inadvertently be doing that's harming our kidneys?

Marcello Tonelli
Excess amounts of certain painkillers such as ibuprofen can certainly be harmful. A person needs to be taking quite a lot of ibuprofen to cause kidney disease. However, when someone has kidney disease and knows about it, ibuprofen, naproxen, anti-inflammatory medicines like that can be harmful. They can cause irreversible damage to the kidneys. So a person should discuss with their health care professional before taking any of those when they know they have a kidney problem.

LuAnn Heinen
Marcello, thank you so much for your time today. This was fantastic and I learned a lot.

Marcello Tonelli
Thanks very much for the opportunity.

LuAnn Heinen
I've been speaking with Dr. Marcello Tonelli, practicing nephrologist and professor at the University of Calgary, who champions awareness and action when it comes to testing for and treating chronic kidney disease.

I'm LuAnn Heinen, and this podcast is produced by Business Group on Health, with Connected Social Media. If you liked the episode, please rate us and leave a review.