

**GOING VIRAL: COVID-19 and Obesity**  
with  
**Adrian Banning, DHSC, PA-C**  
**Angela Thatcher, PA-C**  
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***EPISODE 1: Assessing Risk***

**ADRIAN BANNING:** Hello, my name is Adrian Banning, Doctor of Health Science and PA-C. I'm a faculty member at the Delaware Valley University PA Program, and I'm also a PA researcher. And today I'm here with you for Going Viral, COVID-19 and Obesity, a podcast series developed by the American Academy of Physician Associates, supported by an independent educational grant from Pfizer.

The first season of Going Viral focused on providing patient-centered education and resources to PAs on the testing, diagnosis, and treatment of COVID-19. In this new season, through a four-part series, we'll be diving deeper into the importance of diagnosing and treating COVID for an especially at-risk population group, those managing obesity and other metabolic conditions.

The COVID-19 pandemic is entering its fourth year with new variants like BQ 1 and BQ 1.1 increasingly evading the body's immune defenses. XBB 1.5 emerging, rising hospitalizations, like a 30% increase over just two weeks back in December of 2022, and underutilized treatments and boosters, in particular, bivalent vaccines.

They're all posing challenges in our efforts to end this pandemic. Concurrently, most Americans see COVID-19 as no longer a disruption to their daily lives, and 45% of people say it's time to move on. There's an urgent need to remind healthcare professionals and patients of the importance of COVID-19 diagnosis and treatment, especially for those at high risk for severe disease, such as those managing obesity and other metabolic conditions.

Throughout the pandemic, PAs have played a critical role in helping combat COVID-19. As diagnosis and treatments shifts to the outpatient setting, PAs are ready to meet the challenges on the frontlines. I'm proud to be joined by Angela Thatcher, PA-C, owner of Lifelong Health & Wellness, and Sampath – Sam Wijesinghe DHSC PA-C member of the American Academy of HIV Specialists, and a clinical assistant professor of medicine at Stanford University. Dr. Wijesinghe is the editor and author of *101 Primary Care Case Studies*.

He's a clinical assistant professor and he's the director of career development at the MSPA Program at Stanford School of Medicine. He practices primary care and HIV medicine at Adventist Health Central Valley Network. His clinical interests include primary care medicine, infectious diseases, HIV medicine, and global health. Angela Thatcher is an obesity medicine PA in North Carolina. She holds a certificate of Advanced Education in Obesity Medicine, through the Obesity Medicine Association,

and is a faculty member with the AAPA Obesity Community of Practice Program. Prior to opening her own practice last year, she worked in rural family medicine and urgent care. Welcome to you both.

**ANGELA THATCHER:** Thank you, Adrian.

**DR. SAM WIJESINGHE:** Thank you, Adrian.

**ADRIAN BANNING:** We're so happy to have you here and to be all together today. Let's jump into the discussion. So, I'm going to start with a pretty big question, and Angela, if you want to take the first part of it, and then Sam, if we could hear from you on some of the specifics, that would be great. So, the question is this: Why do patients with metabolic disorders, particularly those living with obesity, present increased risk for severe COVID-19?

**ANGELA THATCHER:** There are two big issues at play with patients who have metabolic disorders and obesity. And they relate to the dysregulation in the immune system and the chronic state of inflammation that is promoted in the body by having excess body fat. When you put those two things together, it creates a situation where patients are not able to mount a good response to the infection itself. And then also, are at risk for significant complications that come with the illness.

So, we see that in the immune response, obesity leads to a dysregulation of the T-cell response in the body, both in fat tissue and in other body sites, and we get an upregulation of certain inflammatory responses, while at the same time there's a decrease in the T-cells that normally would balance or counter those inflammatory responses.

And that can lead to this big cascade of inflammation. You've heard the cytokine storm being discussed in relation to COVID illness, and so here you have sort of a coming together of two different pandemics that both put a patient at high risk for a very inflammatory and exaggerated immune response.

When you combine that with the state of already chronic inflammation that many of these patients have related to their obesity and their metabolic disorders that may be comorbid with that, it significantly increases their risk, as they are actually dealing with infection.

And when you take this impaired immune response and the context of a patient who already is living in a state of chronic inflammation, then you have a patient who is at significant risk and related to respiratory compromise, poor glucose control, the list goes on and on.

**ADRIAN BANNING:** So, Angela, I heard you say it's really a combination of impaired immune response and chronic inflammation coming together in kind of a perfect storm.

And you mentioned respiratory compromise. Sam, can you talk us through some of the body system specific risks that COVID poses to people living with obesity?

**DR. SAM WIJESINGHE:** Angela, you know, those are excellent points.

I think obesity is a complex disease and can lead to respiratory dysfunction, which can increase the risk of severe COVID-19. Obesity is often associated with reduced lung function and may also increase the risk of respiratory failure. And then when it comes to cardiovascular disease, obesity and metabolic disorders can also increase the risk of cardiovascular disease, which has been linked to severe COVID-19.

We have lots of literature out there to show the link between COVID-19 and cardiovascular diseases. And then we also should talk about comorbidities, individuals with metabolic disorders such as Type 2 diabetes, are more likely to have other comorbidities such as hypertension and cardiovascular disease, which can increase the risk of severe COVID-19.

**ADRIAN BANNING:** Sam, thanks for explaining that, and Angela, thanks for your explanations as well.

What are some of the complications a person with obesity may experience if they get infected with COVID-19?

**DR. SAM WIJESINGHE:** Severe respiratory illness is something that comes to my mind among many other things. So COVID-19 primarily affects the respiratory system, and obesity can worsen respiratory function, which can lead to severe respiratory illness and respiratory failure.

And then increased risk of hospitalization is another one that comes to my mind. Individuals with obesity are more likely to require hospitalization if they become infected with COVID-19. And then also we should always talk about the increased risk of ICU admission, and then the associated cost with that.

**ADRIAN BANNING:** Sam, thanks so much for bringing those complications to our attention. Angela, once someone is in the hospital there are some specific risks to them, can you talk us through some of those?

So there are two big risk factors that can increase a patient's length of time in the hospital as well as their risk while they are there of mortality or other complications. And those tend to be ventilator-dependence and increased risk of thrombosis.

Patients who have obesity have a higher risk of needing respiratory support, both non-invasive and invasive with mechanical ventilation. And once patients with obesity are requiring ventilation, they tend to have a longer course of needing that and a more difficult time weaning off of ventilator dependence.

This is related to both chronic issues that may already exist in lung dysfunction, and predispose them to a more difficult time having successful ventilation, as well as some of the acute changes that are happening in their COVID illness that increase their risk, related to the upper respiratory tract and upper respiratory infection.

In COVID-19 there's also a significant increase in the risk of blood clots, and obesity itself is a risk factor for thrombosis. So, we have patients who have obesity who become infected with COVID-19 and that further increases their risk of complications in that area.

This is related to the chronic inflammatory state of obesity which activates a pathway that is pro-thrombotic as well as impairs the pathway that would normally assist in fibrinolysis. And both of those combine to make much higher risk of thrombosis.

**ADRIAN BANNING:** I hear you both saying we really want to keep patients well and out of the hospital. That might sound obvious, but something to really focus on. Angela, what are the vaccination options for patients managing obesity and/or other metabolic conditions?

**ANGELA THATCHER:** Right now with the COVID-19 illness we have three primary types of vaccination. There are the mRNA vaccinations, the vector vaccinations and the protein subunit vaccines. And right now, all of these vaccines appear to be highly effective and there is no one vaccine that has been seen to be superior in patients with obesity in regards to preventing COVID illness and reducing the severity of illness.

So, across the board it's recommended in general that a patient receive one of these, and they can discuss further with their healthcare provider as to which might be the best for them.

**ADRIAN BANNING:** Okay, so one and done, get the original series and done, we know there's boosters out there. How important are boosters for this population?

**ANGELA THATCHER:** Boosters are important for two reasons really. You know, the initial vaccines that we had access to during the pandemic have been updated. So, it's recommended that everyone who is six or up really receive at least one of those updated COVID-19 vaccines.

And then, people who are at risk of immunocompromise, it's recommended that they can get one additional dose of the updated vaccines.

**ADRIAN BANNING:** Sam, if you wouldn't mind jumping in here. Can you add on and talk to us about some of the pros and cons of vaccination?

**DR. SAM WIJESINGHE:** Yes, surely. I think this is probably a good time to talk about metabolic syndrome. If I can summarize those conditions. So, if someone has large

baseline hypertension or diabetes, and then if they have high triglyceride or low HDL. Those are the qualified conditions for metabolic syndrome.

And then when I was reading NIH website recently, one out of three adult Americans have metabolic syndrome. So, we are talking about a very large population with metabolic syndrome in the country.

While there are some potential side effects of vaccination, the risk associated with not getting vaccinated and potentially contracting COVID-19 are generally considered to be greater for most people, including those with obesity and metabolic conditions.

**ADRIAN BANNING:** Thank you for clarifying that. It's such a large amount of our population. Okay, so next question then: Are the COVID-19 vaccines and boosters less effective for patients managing obesity and other metabolic conditions?

**ANGELA THATCHER:** So, the data here is limited, but there are studies that have suggested that individuals with metabolic disease and obesity may have a weaker immune response to these vaccines than people who do not have these conditions. This overall could lead to reduced vaccine effectiveness in terms of preventing the infection and severe illness related to the infection.

But I think overall the takeaway is that more research is needed. It's not a reason for patients not to receive vaccination, but rather for us to look for better answers as to why this happens and how this can be optimized.

**DR. SAM WIJESINGHE:** If I can add to that. Despite these concerns, it is still recommended that people with obesity and other metabolic conditions receive COVID-19 vaccinations and boosters. This is because the vaccinations can still provide some level of protection against the virus, even if effectiveness may be slightly reduced.

**ADRIAN BANNING:** Okay, thanks for that. So, transitioning away from prevention and vaccinations, let's talk about testing a little bit. Sam, what are the current options to test for COVID-19? How should patients approach testing when they've had a known exposure?

**DR. SAM WIJESINGHE:** PCR test, that is still the gold standard. That's the one most reliable. And then we have rapid antigen tests. And the type of test used may depend on factors such as availability of testing in the area, and the symptoms, and the exposure risk, all those come to...all those, we should consider all those factors when we decide what test to order.

For example, if someone had exposure with someone with COVID-19 yesterday, rapid antigen test is not going to be a reliable test. I get patients all the time, soon after having exposure, they don't even have symptoms, and then they do the home test, and then they call me, "I am negative."

I think it's a teachable moment, I take the time to explain to them the rapid antigen test is not a reliable test at that time. PCR may be a good test at that time. So I take that opportunity to explain how these window periods are with each testing method.

**ADRIAN BANNING:** Just like a PA for our stellar patient education, and especially a PA who is also a professor, looking for those teachable moments. Thanks, Sam. Okay, so say someone knows they have COVID or they've tested positive, Angela, why is early treatment of COVID-19 for those living with metabolic conditions so important?

**ANGELA THATCHER:** Well, our goal is to reduce the severity and the duration of the illness. So, treatment given early in the course of a COVID-19 infection can help reduce the severity and the duration of symptoms. By starting treatment as soon as possible the patients may be able to avoid having more significant and severe symptoms that could lead to hospitalization or even death.

Being able to start treatment early does prevent hospitalization in many cases, and that's important in order to reduce the burden on our healthcare system, as well as for protecting the individual's health.

**ADRIAN BANNING:** Thanks, Angela. Sam, anything to add on that?

**DR. SAM WIJESINGHE:** Yes, you know, I think reduced risk of long-term complications is another one I would like to share here. And some patients with COVID-19 may experience long-term complications such as lung damage or other organ damage.

So early treatment may help reduce the risk of long-term complications by addressing the virus and preventing it from causing further damage. There are some patients with this unknown cough and going on for a very long time. And the only explanation we have, that started after having COVID.

And it is probably a long-term complication. So, we are still in the process of evaluating the patient. And also, I should add that we at Stanford with the NIH grant we do research to find out what's happening with those long-term COVID-19 patients.

So, you know, this is an area that we will continue to learn a lot, but I think it is important to discuss these facts and happenings. And although we don't know the exact answers, we know that it has happened after COVID and it has something to do with COVID.

If somebody has early treatment, that can help limit the spread of the infection by reducing the amount of virus in the body, and therefore reducing the risk of transmission to others. So, I think all those are important things to highlight.

**ADRIAN BANNING:** Thanks for clarifying some of those points for us.

So that's going to about do it for us for this episode. Sam and Angela, thank you so much for joining the discussion today.

**ANGELA THATCHER:** Thank you, it was great to be here.

**DR. SAM WIJESINGHE:** Thank you, Adrian. Thank you, Angela.

**ADRIAN BANNING:** There are three other episodes in this series. One on prevention and diagnosis, another on treatment best practices and a fourth on communicating with patients. We encourage you to listen to all four, as well as to check out the supporting one-pagers that go along with these podcasts. Thanks so much for joining us.

