**Medical Insider COPD Podcast, Season 2
COPD and comorbidities: How can epidemiology help us?**

Richard ([00:04](https://www.rev.com/transcript-editor/Edit?token=fXxfH16zpE5tArT2Wxt217otHGcIe6sDgPVs7O3lKKpGYxzfO8YGXLt53cNqVvkmO8gF3bkHeNEDDke2-L25yOLdid8&loadFrom=DocumentDeeplink&ts=4.16)):

This podcast is intended for healthcare professionals outside the United Kingdom and the United States of America only. Welcome to the Medical Insider COPD by Boehringer Ingelheim, a podcast offering a breath of fresh air to clinicians treating COPD across the globe. My name is Dr. Richard Russell. I'm a Consultant Chest Physician at Lymington New Forest Hospital in the United Kingdom, a Senior Clinical Researcher at the University of Oxford, and the Editor-in-Chief of the International Journal of COPD.

Richard ([00:41](https://www.rev.com/transcript-editor/Edit?token=GIRXYAFNDusrlGWNv-me3WfYvkh5VKbx2dj3-BSg444jxP1gZl3c1mjPSgnncErsRLMHgXq6cSoAwQY7xN4Rbja1BfM&loadFrom=DocumentDeeplink&ts=41.76)):

I'm your moderating host for this season of Medical Insider COPD Podcast. And I'm here to bring you news and insights in COPD right from the source directly to you. So, thank you for joining us today. Keep an eye out for the next Medical Insider COPD Podcast and do look back at what we've already recorded so you do not miss any exciting podcasts in our series. Today, we're going to delve into an exciting and important new publication, which has only just been published. This is by Mason et al. in Thorax, just published on the 11th of February online.

Richard ([01:14](https://www.rev.com/transcript-editor/Edit?token=ucJOnNoF3_CfWWLrlPV0tTFuBKo0tjKd_q41hLQ7nlaz06ed6alWtdWFcxMMaO9MD4RnjHUnUg5NjHFIHlVBYZ1o4Sk&loadFrom=DocumentDeeplink&ts=74.57)):

It's entitled “Respiratory exacerbations are associated with muscle loss in current and former smokers” by the COPDGene investigators from America. Then I'm going to unpack for you an important hot topic in social media, No Pun Intended. This is about wood burning stoves. Wood burning stoves have an impact on health, and there's been an important new publication that has looked into this. And I think this is worth sharing because it's causing a lot of controversy on the internet. But first, I'm delighted to introduce today's guest, Professor Jenni Quint. Jenni is an old friend of mine, is a Professor of Respiratory Epidemiology at Imperial College in London. Welcome, Jenni.

Jenni ([01:54](https://www.rev.com/transcript-editor/Edit?token=qdfNS53q2KWAG4ppHTduj_6IdtlV9if_iW2ztg3T6VewOOzPnSTzbOM6OgfcgsyJ6d5fbmQHwLPIZtecfDXtZOReTKI&loadFrom=DocumentDeeplink&ts=114.71)):

Thanks, Richard. It's really lovely to chat with you and thank you for the invitation to be here this afternoon.

Richard ([01:59](https://www.rev.com/transcript-editor/Edit?token=fNH8TjRD9Z0xcDw6AXWYrverYEahrg27gTE8ZYeKsLYjwu71Ijk0CTR557rE52iTsm7Y_8FpW2HgrGGvu6VU155YAU8&loadFrom=DocumentDeeplink&ts=119.73)):

Perhaps you could tell the audience a little bit about yourself and about your interests and your research so far?

Jenni ([02:05](https://www.rev.com/transcript-editor/Edit?token=gM_DrauXoOKf7ePlxjPQxrQOnR3vcmHpzRr9NcEaWC7Jq5YJVTQQUKp1WE1_Li0rCXV4RdWzPWUKH5K8n1O2-FOELW8&loadFrom=DocumentDeeplink&ts=125.57)):

Sure. So, I'm a Professor of Respiratory Epidemiology, as you mentioned, I'm a practicing clinician. I spend one day a week doing clinical work and the rest of the time, I'm head of a research group who use various different sources of routinely de-identified electronic healthcare record data to study various aspects of respiratory disease, and in particular, the overlap of respiratory and cardiovascular disease.

Richard ([02:29](https://www.rev.com/transcript-editor/Edit?token=hnqueJGQW5HOpUhe33MIdw4l7KBMK18_y0-FmTP5TUrrMCYeqGRKc-3WtM2-sJ_ysve61Lwh7_oU_gzJhSztmDFxxoc&loadFrom=DocumentDeeplink&ts=149.06)):

So, this is absolutely brilliant to have you today, Jenni. Because you're not only clinician but you're also an epidemiologist. And this has been a very exciting year for epidemiologists. You've gone from zeros to heroes.

Jenni ([02:40](https://www.rev.com/transcript-editor/Edit?token=uQKpnYP3HimU9k-Om4Sq-0mk3FDWbRM0MzcYMVXR3CGsTCxEWyBB28aG73KPKG8Emwl8yqIts5ABG9sE9XjzsJ3sw3w&loadFrom=DocumentDeeplink&ts=160.8)):

It's been a brilliant year for respiratory epidemiologists. So, I've never known that there were so many across the globe, but I think what's been great if you can find a silver lining in the whole COVID-19 pandemic. Is the fact as you say that big data and epidemiology is very much taking centre stage.

Richard ([02:58](https://www.rev.com/transcript-editor/Edit?token=fdwl9Cs-qiWQ8ZOaUTyktVJWBX7RxgyYzMZj3rRdBGr32Uu_8_54gT1eWMvnfv4XuinebRnlLCzUqwxO4z-6UbIbUD8&loadFrom=DocumentDeeplink&ts=178.71)):

And this is what we're going to talk about a little bit today and how we interpret trials, how we interpret those results. And as a clinician Jenni, how we actually implement those trials in practice. So, let's jump straight in there with that. So, let's look at, for example, bronchodilators in COPD. We treat people with dual bronchodilators and we also find that from the data, sometimes people are very stable over long terms, but sometimes they need more therapy. And how can we evaluate that effectiveness of bronchodilatation in studies by using the data you actually have mentioned?

Jenni ([03:29](https://www.rev.com/transcript-editor/Edit?token=vVwLeZVC8Rnq8kfKk4_fTd4Z4_qb03ZKQxnJkKAadR__gAvdSZXnyrtKkpQfhxkIzN0YMO2Bo3rfK3jB1FLEZ9zWOJs&loadFrom=DocumentDeeplink&ts=209.97)):

So that's a really important question actually, Richard and as everybody knows, randomised-controlled trials are very much the gold standard. And so they should be. But the sorts of data that I use really do feed into filling in a gap and helping to put together pieces of the puzzle in understanding what happens when you use these drugs in patient populations who wouldn't necessarily meet inclusion criteria for randomised-controlled trials.

Richard ([03:55](https://www.rev.com/transcript-editor/Edit?token=g_mOnIkWdx_9ZVrmDEDxgfqBzjoo3LfMLuGfAO7DpdCdxnAUUWL-KMDmgr3snYGWUS9Rio8jbwFu_t9Ed-tE1zHGMUc&loadFrom=DocumentDeeplink&ts=235.73)):

And have we therefore sometimes made mistakes or overestimating effect size, sometimes in making decisions which we shouldn't do in clinical practice?

Jenni ([04:03](https://www.rev.com/transcript-editor/Edit?token=EXL2jlCECvng-fTVjFQwJHZk1gpH_M9bdKgjamkAHvW20l_6j5GRVCe1rwv0LE9R69KJTjzoHpAfpD2J_2TEwFtuvmo&loadFrom=DocumentDeeplink&ts=243.6)):

So, I think we need to remember that randomised-controlled trials are almost a bit of a false setting. So, there's a very clear primary outcome for which a study is powered. You might have several secondary exploratory endpoints, but it's a very, very controlled setting and not necessarily typical of what goes on in day-to-day life. And that's where I think the observational studies add a really important piece of the evidence. You understand not only what happens when people are using a particular treatment when they're not in that sort of controlled environment, but you also see what happens when the treatments being used in individuals, maybe who would have been excluded from those randomised-controlled trials to start with. Because they have some of the contra-indications that you're worried about in terms of specific treatments.

Richard ([04:48](https://www.rev.com/transcript-editor/Edit?token=-UjhbCoVoJmANuFRKlJaqdnpL1q9fv-hPIP5El8wrrb-vA3v65pYUHyLJefAilEaMVSM8xLA-tyx6S7C17XjKYAqx40&loadFrom=DocumentDeeplink&ts=288.8)):

So, do you think sometimes we, with trials, for example, of dual bronchodilators versus inhaled steroids and triple therapy are overemphasizing some of those outcomes and maybe missing some adverse outcomes sometimes?

Jenni ([05:02](https://www.rev.com/transcript-editor/Edit?token=fOoykOWHijRHhLvS5hLdYpRjbjPs9fFFL7MqgajzYoOm8xLS3yOEOZKTezJdWE3t-w0d7DgGtrQMBwtsN8HHivhQGdE&loadFrom=DocumentDeeplink&ts=302.51)):

I think what's difficult with randomised-controlled trials is that they're asking a very specific question in a very short period of time. And where the observational data come into their own is that ability to look things over a longer time period, or to be able to understand what happens in particular subgroups of populations because people with COPD are not all the same. And often we treat the disease as if everybody were homogenous and they're really not. So, I don't think it's about one being right, or one being wrong. I think it's about how you interpret the evidence. And I think it's really important to look at all the different sources of evidence and not necessarily look at one is being significantly superior.

Richard ([05:43](https://www.rev.com/transcript-editor/Edit?token=-hNLxgkalgSC1NbHEP6LhvjUgfM677BFXDAFYh6v9fQUr2zcFszoFLDX_3wLacE9dGufM5BF2sLLHy3PiQQXBfnghI0&loadFrom=DocumentDeeplink&ts=347.89)):

So, it's true to say in real life, many people will be absolutely stable on one particular strategy, such as bronchodilators. But another other group of people who may have been studied in a randomised-controlled trial will certainly need triple therapy if they’ve got an increased risk of exacerbation and maybe high eosinophil count, for example.

Jenni ([05:59](https://www.rev.com/transcript-editor/Edit?token=0XQCPmqjAirCDY7p0yXY-tOUGMLI5AzVm6s7TDY7xpcQUgH_gT2gdS89WcjuQB4iC923fkLCEC9AeZG8NWvrDEs9Cns&loadFrom=DocumentDeeplink&ts=366.31)):

Absolutely the most important thing to my mind, and certainly what I do when I'm in my clinical practice is, I think, about the individual that I have sat in front of me. And I try not to make clinical decisions based purely on the latest randomised-controlled trial that I read, but rather to think holistically about the individual who's there. It might be the treatment isn’t working because they're not adherent, that they're not using it. That they don't know how to use a particular inhaler device properly. It might be that they've got multiple comorbidities that are actually impacting on their symptoms and it's not the COPD itself that's driving the disease or the symptoms that they're feeling. So, I think the most important thing is to think about people as individuals.

Richard ([06:42](https://www.rev.com/transcript-editor/Edit?token=5yT1FLx0uoHMYRzJ-wy_PmnB0si4lSQX12K32eGlm4MqUB9jmNTRN-S8_iZsyz23uaPEkBt-yN45IzctjM6WBbZ3qTE&loadFrom=DocumentDeeplink&ts=409.23)):

That's really helpful. I want to unpack a couple of terms actually epidemiologically. We often use things like effectiveness and efficacy interchangeably, but they're not really are they?

Jenni ([06:53](https://www.rev.com/transcript-editor/Edit?token=NyE-z4oAnOl1cdn6U-e_A5gSodt-p6G8vKh7gttjzGhFpR-Cl2e_SrsiS6Q45jCT4ZLkHqd8GlTLcYL62mD8V-tNw-0&loadFrom=DocumentDeeplink&ts=418.02)):

No. They're two completely different things. So, efficacy is very much what randomised-controlled trials set out to do when they're looking at a drug, is how well does that drug work? And the effectiveness is really what we do in the observational data, which is understanding how does this work out in terms of everyday clinical practice and what impact are we really seeing of the drug, when you look at this at a population level, amongst a very heterogeneous group of individuals who were using a particular treatment.

Richard ([07:20](https://www.rev.com/transcript-editor/Edit?token=5JGgP-vVTzuI8oYq7IazWh4IhmLF_8Ogzp6w_pg_3Dei-omCj_CBKjaZS_WDqcDiTseKor_O0OUNiM9xQsmbS3vY5lk&loadFrom=DocumentDeeplink&ts=445.47)):

Jenni, you mentioned comorbidities already, and a lot of your research has been based around comorbidities and COPD, and we're not very good always at picking them up and tell us a bit about the cardiovascular comorbidities particularly in your work.

Jenni ([07:50](https://www.rev.com/transcript-editor/Edit?token=8-5sL8epGXd_nBrXOU6DZ5whQTnyXMgwYc6761H0zElB4LUZ4G3ppWVYx6y0mcb1jIkqVd4DIHAFcDw1XWC44MDTbso&loadFrom=DocumentDeeplink&ts=470.02)):

So, we know that people with COPD very commonly have other disease. And some of the work that we've done recently in fact a paper, we just had published in Thorax showed that if you have somebody in whom you suspect a diagnosis of heart failure, so they probably have heart failure, but they don't have a formal diagnosis yet. Their COPD exacerbation risk is higher than in somebody who has a definitive diagnosis of heart failure.

Jenni ([08:00](https://www.rev.com/transcript-editor/Edit?token=OFlj1SPBvXcSvRja9AfQRy9iVsNbDmFpoNDbYdKzc8wbcdKhecygLB3kBx06vDoaGbC9qF-WcprfMj6GlGS-Mz46jyk&loadFrom=DocumentDeeplink&ts=503.57)):

And that actually that risk also changes depending on whether you've recently started them on treatment for heart failure once you've made a diagnosis, or they're stable, and they've been on treatment for heart failure for a slightly longer period of time. Suggesting that actually, if we look out for some of these factors that are impacting in terms of symptoms that overlap with COPD, and we recognise some of these diseases earlier, manage them appropriately, that we can alter not only the course of their cardiovascular comorbidity, but impact in terms of the natural history of their COPD.

Richard ([08:32](https://www.rev.com/transcript-editor/Edit?token=W0dG8zMXR8ExG5IpdmdQBZ0Xdequ6BQa4txOM1e5D9fWV4q0aHTMPcN3BjAAXeZD1jgMEQS0st0c5Y_vjPmbEj4oP1Y&loadFrom=DocumentDeeplink&ts=535.69)):

And do you think it's likely that we are sometimes escalating people onto increased respiratory therapy, when they should be getting heart failure treatment?

Jenni ([08:41](https://www.rev.com/transcript-editor/Edit?token=XZfWGgulwgzFHk-fPlGsyu5xqk9W6zNLdnr4LF8B-PxNhNRzEN-4G4dHJMrRvscCbkMC0YouoCDlaOecyQ5fgkTRTSQ&loadFrom=DocumentDeeplink&ts=544.91)):

I think absolutely, that sort of thing happens in clinical practice. I think it's very, very easy when you have a patient in front of you with a diagnosis to make the assumption that any symptoms they're having are associated with that diagnosis. And I can remember when I was covering the acute admissions unit as a consultant several years ago, being referred a whole variety of patients with what were labelled by the people who'd seen them as an exacerbation of COPD. But in reality, on reviewing all the information on the post-take ward round, were really a pulmonary embolus or non–ST-elevation MI or a worsening of underlying heart failure. And it takes me back to the point about the treatment. It's about thinking about the individual in front of you and what doesn't quite add up and why would I make the assumption that it's automatically deterioration of their disease without thinking about something else?

Richard ([09:32](https://www.rev.com/transcript-editor/Edit?token=LCFM6b3Y0aZ2KqzwGdYfE9PfC3pBZlAQMix-3lsBmYrinEV11brW6hIiz8-jvGxjJUtoHShL3wHO_1cdrJWrNRQ2WMA&loadFrom=DocumentDeeplink&ts=596.21)):

So, you've made a clarion call there that respiratory physicians need to think about heart failure and consider it, absolutely. Can I flip it?

Jenni ([09:41](https://www.rev.com/transcript-editor/Edit?token=86p9xYZ_kPy43asgkVQsIiMMSrDduHuS-eeEPNawe69ZLMH5c2ez6-578WXZEP6vI0oO0tQIr5UTOaetQULr-7W7pOQ&loadFrom=DocumentDeeplink&ts=603.64)):

Definitely.

Richard ([09:42](https://www.rev.com/transcript-editor/Edit?token=Ik_bPeSkO6e-iqqcaFfShmk9KnOV0jNu0irwVikN53jaLaKmofGZJeSMpWI_hYnduDnbuLJANC8auoPAdJOZXJpRfBM&loadFrom=DocumentDeeplink&ts=604.4)):

Do you think cardiologists need to think about COPD?

Jenni ([09:43](https://www.rev.com/transcript-editor/Edit?token=_OVIpKbol2rGDwsnotk8DLkxDT-U1Oxtm0LGn4rvxUqmQtL3yV8T0-7rWeT7oxaCOPxWoNn2_1LBV5mgXDqIbiNr6O4&loadFrom=DocumentDeeplink&ts=606.8)):

Absolutely. I think one of the real sad things actually about the way medicine has evolved certainly in the UK over the last 20 years, since I qualified for medical school, is that we all become very sub-specialised and very siloed. And as I've already alluded to, people don't just present with one disease in the typical way that they do in a textbook. And I don't think we talk to each other enough across specialty and think about patients in a holistic way.

Richard ([10:10](https://www.rev.com/transcript-editor/Edit?token=hgunsnwVG6fMhfac0O-PgDfGd309tzzzDKBWkXYRNROu0hyaRpO-wIWjNle4s9iUBQ99wC_GNe6dtZUrzLW_46Ltcro&loadFrom=DocumentDeeplink&ts=633.68)):

One aspect of cardiology, which we always would like to learn from is their ability and actually their results actually in preventative therapy, both primary and secondary ventures. They've been very successful overall at reducing morbidity, mortality and cardiovascular disease over the last 20 years. Do you think we can learn from that in respiratory medicine and have we maybe made some mistakes in the past?

Jenni ([10:33](https://www.rev.com/transcript-editor/Edit?token=cNAORywvM0YtvvuSg66qQ9l6p7LiM2-sUQaDEaKD97L0qj_CPDsZoEzCQ2L8BW9ToLBU848msb4ypWOvOMJJwCmCtO8&loadFrom=DocumentDeeplink&ts=656.56)):

I think there's a lot that we can potentially learn actually. I think one of the difficulties is if you look across all of the treatments that we have for COPD, we don't really have treatments that have the same impact that some of those cardiovascular treatments have. So, I think there's definitely a call in one direction for better treatments to manage our COPD patient population. In addition to just making sure that we get all of the basics right. Because optimising adherence and compliance with medication and diagnosing comorbidities and stopping smoking, et cetera, all of those things will also help us in terms of managing people better.

Richard ([11:13](https://www.rev.com/transcript-editor/Edit?token=eq8t9BIVM6OQGHEi7iaDzJLB_hv0g13tifHtj4dbplKtJ08dv3BmshjpAxe8l7eLVkK2K2MwavEY9UtJFj3_rTNT6vY&loadFrom=DocumentDeeplink&ts=696.68)):

Let me put you on the spot about that a little bit in a sense of, we've got some studies now, the ETHOS study being the latest one, which has shown a small mortality benefit of people in that study. And it's a randomised-controlled trial with a fixed entry and exit criteria, treated with triple therapy. Can that be extrapolated into any preventative strategy you think?

Jenni ([11:37](https://www.rev.com/transcript-editor/Edit?token=IjxSck5r_qS7LJmuuxmqJXV7WXjuWfTFnN2SdpOWbf0n_0QfHLcSEDGXzySVr86v9v7g5mTkuVU-VEkp1BHxBqFhvIE&loadFrom=DocumentDeeplink&ts=720.8)):

So personally, I don't think we can start to extrapolate that sort of information to a population level yet. I agree with you that I think it's promising that there are signals that things can be done, but the whole magnitude of the effect size as you said, isn't enormous. And I think that's a really good example of where understanding in a routine clinical practice scenario, how things would play out, would be incredibly important information to contextualise the trial.

Richard ([12:11](https://www.rev.com/transcript-editor/Edit?token=NEwOEL3t7LH6CsGr_w7zueuyM1VqZV7sPxP_Il8ovGb5L3Gl0pGQ24HdT7132ODQqxfV0J93OE-lL1Q2iKHaZmkPWlI&loadFrom=DocumentDeeplink&ts=753.13)):

Let's briefly talk again about clinical trials and the differences between randomised-controlled trials and the population work you do. We've mentioned about comorbidities. Unfortunately, randomised-controlled trials often while they have, by the very nature to exclude comorbidities very often. Can you summarise the differences in a clear way between the randomised-controlled trial approach and the population approach?

Jenni ([12:32](https://www.rev.com/transcript-editor/Edit?token=v7oLven2inZf96HYPHnYfrayDZZgh3llxQxBOXBGPm-wW7P3vWgAy8ZMh1Vik9B6LuzhJKNBBSTc3ogXoHOqdEEXfZs&loadFrom=DocumentDeeplink&ts=775.86)):

Sure. So, we did a study a little while ago, that was sponsored by Boehringer Ingelheim, where we were looking at dual bronchodilator therapy and inhaled corticosteroid/LABA therapy with escalation to fixed triple therapy as the outcome. And in that particular study, we were able using US claims data to be able to look in routine clinical practice, at people who've been prescribed these specific treatments, what the time was to exacerbation. What the pneumonia risk was. As well as what has various different end points, and not just focusing on the escalation to triple.

Jenni ([13:13](https://www.rev.com/transcript-editor/Edit?token=6uGgL_b6IyaAcKMywSA_e1FwpsaGz6P2Wf8a2voUGyS1hb0GPekU-UD-yJbqfZtj4jK9frWn1s1T2RN9iK-V1wrMEoY&loadFrom=DocumentDeeplink&ts=816.72)):

And so again, I think for a whole host of reasons that particular study is useful with adding information to the puzzle. So, we were able to show that actually, if you are on dual bronchodilator therapy, you are less likely to be escalated to triple therapy, that the exacerbation risk was actually lower than those that were on the LABA/ICS group. There is absolutely some confounding in all of this and confounding by indication in terms of the treatment people are given.

Jenni ([13:37](https://www.rev.com/transcript-editor/Edit?token=txkoCYuFQBKTPBxoOj_qV6a8rqccFsX98NwWWECPVr1wypBVfz2jwA9yLKfeZoSgBLfzlhHgjZYRWE54gQKEyq6Vzd0&loadFrom=DocumentDeeplink&ts=840.5)):

Sometimes with observational data, it's really, really difficult to be able to tease out all of the very, very small specific factors because you're not in a controlled environment and randomised-controlled trial. But nonetheless, when your numbers are large in studies like this, and you're looking at things at a population level, those sorts of things almost come out in the wash a little bit and you can still start to see trends and effects, which I think are hugely helpful, in terms of choosing how to treat patients.

Richard ([14:04](https://www.rev.com/transcript-editor/Edit?token=op5A9soCyxjE6RvWf_caC4Drdemg5zTTAKHW1byCtOgZVpPXkn0f1m2JcMZxMYBA5PYlQNfFagmyU6-edRCKRGUHklU&loadFrom=DocumentDeeplink&ts=868.41)):

So I'm trying to understand here, there's a little bit of a conflict isn't there, between the drive that we have to personalise medicine and to giving the right people with the right diagnosis, clear advice and clear treatment, which will work for them with a reduced risk of side effects. But I'm also, in the population sense, we're obviously finding data that's yes, we should treat more people. How do we square that circle, so to speak?

Jenni ([14:30](https://www.rev.com/transcript-editor/Edit?token=ejaPIm8PAE1dGGJK-m2MzJsNdYmajr-rMi3uDOyEQpf3GbF8Vff_tt1PX_wMW0Nk7pxwYnNmDn67DfV-kDKktbA4yWU&loadFrom=DocumentDeeplink&ts=893.44)):

So, I think that's a brilliant question actually. And the example I tend to give when I'm teaching is, if you look, for example, at the big statistics that are put on us in the UK website for example, of number of people with asthma, or WHO website, it doesn't matter. My question back at people is always where do those data come from? And of course, it comes from data that we collect routinely, large population level studies.

Jenni ([14:56](https://www.rev.com/transcript-editor/Edit?token=JTA3ljiXh-ASHqHjs1nuWfstHV6zzfGC8tRzR0iFDIvdgeCuOVp9cmRpsCq-yXKUCB0echR6nf9Vy4_JvWGobezUpho&loadFrom=DocumentDeeplink&ts=920.19)):

And so, there is absolute merit in understanding what's going on at a population level. And equally, when we talk about personalised medicine and treatable traits and tailoring things for an individual, the way that we find those individuals and who we're going to treat in a specific way is again, through population level studies. And this is why all drug development goes through all sorts of stages of investigation, including looking at the size of subpopulations that might benefit from a particular treatment rather than simply looking at populations of disease as a whole.

Richard ([15:31](https://www.rev.com/transcript-editor/Edit?token=w-QFFRRo0J0cDi2LaQURgxdH9pdorO8NZwVa7_oeChpPGm6Q92pOPn0nO-_6SPJmduplMP1Nv2gh9veFS0P4GAKdYW8&loadFrom=DocumentDeeplink&ts=955.15)):

And as you said at the very beginning, perhaps one of the silver linings from COVID is that we're beginning to look at this data in a different way, understanding this data better, and seeing therefore where population density data lines up with randomised-controlled trials, that's telling us perhaps a better truth, perhaps?

Jenni ([15:46](https://www.rev.com/transcript-editor/Edit?token=4Qmhll4NjYkVdF_Ih2O1mM8c3nnphMF3Tm-qBnbnJD0BHDkY9xX-IIaN-V9XW-yOKUII_1HC0a1TRnvMf-CC5qWMrh8&loadFrom=DocumentDeeplink&ts=970.35)):

Absolutely. So, the FDA, Europeans Medicines Agency, NICE within the UK, all now appreciate the value of observational data in terms of informing its decision making. It's not the be-all and end-all, it's not the gold standard. We've already said that randomised-controlled trials are, but it is very much a piece of the puzzle. And what's been great about the spotlight being on epidemiology this past year, is the increase in transparency, the appreciation of the robust statistical methodologies that exist to be able to analyse these data. And I think the field is only going to continue to grow.

Richard ([16:22](https://www.rev.com/transcript-editor/Edit?token=m01cDuKUTkij4TEsuTumw5gLCjJzFiLBKyNdub7sxJ1OWlqBNdWwcWmaLObJOdeik7r7m2F4MZOe7reDzrl0RRwtGb0&loadFrom=DocumentDeeplink&ts=1006.66)):

Brilliant. Jenni, I've really enjoyed talking with you today and before we say goodbye, perhaps you could give us just a few of the key couple of bullet points of key takeaways.

Jenni ([16:33](https://www.rev.com/transcript-editor/Edit?token=yK9CRjcVWAoT4be4WHctndERPamouK1pnD5cZKpm8CsGRPYVzeMj7wrxtnyErm3edo6pnl2b8lf10VO9_PndB7immfk&loadFrom=DocumentDeeplink&ts=1023.32)):

So, my advice would be from a clinical standpoint, first of all, think about the individual in front of you. Think about the simple things that are potentially important. Is patient adherent to treatment? Are they compliant with their treatment? Are there comorbidities that are perhaps not diagnosed? Are there other reasons that they might be having their symptoms that aren't just their COPD? I would encourage you to talk to your cardiovascular colleagues. I think we're not always good at liaising with other disciplines in the hospital, and we're very siloed in our working. And from an epidemiological standpoint, I would say love epidemiology and don't look at it as being the poor friend to the randomised-control trial. Take it for what it is, see the pieces of the puzzle that it helps to fill and enjoy reading it and using it in your clinical decision making.

Richard ([17:22](https://www.rev.com/transcript-editor/Edit?token=KdCbuYFFJN7rdN-K9syJ46KsvWHg1G7qUzGxcRuXRy3ujAIvKpJGvM7Qs_cybzFJZZ2eF5Utw-pvqeUnt-O8AQIgAkE&loadFrom=DocumentDeeplink&ts=1073.89)):

Professor Quint, thank you very much for joining us today on the podcast. It's been great fun and really, really informative. Thank you so much, Jenni.

Jenni ([17:30](https://www.rev.com/transcript-editor/Edit?token=IF4XCKFvkAFfZjnDBgcayADeWZ5u2v3_3fOYx-NlvI4VmSvDwZMfLMWW2aNzRQ5Pb-U2b--m4BtlV9N1Z0FwQlcu3pE&loadFrom=DocumentDeeplink&ts=1081.89)):

My pleasure. Thank you for having me.

Richard ([17:36](https://www.rev.com/transcript-editor/Edit?token=ZlHSgt-3JDxJ35mcsz54OXMJkGXRXO35XdJSIM7z1sBJCGpnW09QaMzxAy47TabsOHdxZZuCDCOX3S4ZXecbz5ZWuww&loadFrom=DocumentDeeplink&ts=1088.8)):

In a moment, I'm going to bring to you the new hot topic in COPD, which is all about wood-burning stoves. But before I do that, I want to unpack for you a paper that's just been published online first in Thorax. This is by S. Mason et al. and is entitled ‘Respiratory Exacerbations are Associated with Muscle Loss in Current and Former Smokers.’ This is on behalf of the COPDgene investigators in the United States. It was published online on the 11th of February. What's interesting about this paper is they looked at muscle wasting in COPD. And this muscle wasting is definitely associated with mortality. And we know that acute exacerbations of COPD lead to wasting. So, what the COPDGene Investigators had done is assessed by serial CT scanning the area of the pectoralis muscle in the chest.

Richard ([18:22](https://www.rev.com/transcript-editor/Edit?token=WxWXKX3cQ-FRl1B06eXY-dWQPZ4Rj-Ifv68z77AQPX1McNJqJvXqTyLdktf03pakmnVD7ao2-CI2lLkZjCJhn05PM4A&loadFrom=DocumentDeeplink&ts=1139.06)):

They use the COPDGene cohort and the ECLIPSE long-term cohort of smokers with more than 10 pack years. This is over 5,000 patients. They had to have at least two CT scans and an exacerbation history. What was really interesting about this paper, is they demonstrated both age-related, but also COPD exacerbation-related muscle loss. So, the muscle loss reporting to age, sex and body mass index. But on top of that, if you had exacerbations, you lost even more muscle. What was also fascinating was if you did pulmonary rehabilitation, you did not lose muscle. Unfortunately, only 4.8% of patients in the study did rehabilitation. So, what's the take-home message? COPD patients anyway lose more muscle than normals. We also know that each exacerbation causes approximately six months of muscle loss.

Richard ([19:15](https://www.rev.com/transcript-editor/Edit?token=esj-5Q_nhZNK2oVav9GogQ5PQ0FTxRWmwvKZJQ0uchpdhKZLBh7fN4WdjTU4_KalmOtXmLbxzSywDXt-VqB2VPcg-Uk&loadFrom=DocumentDeeplink&ts=1192.8)):

So, this is categorising and actually clarifying what is going on. But also, I'm taking away from this, from point of view of rehabilitation, that actually rehabilitation is really important after exacerbations and should be pushed everywhere. Also, lung function is not everything. We need to look more holistically at our patients, and maybe we need to put this muscle area as part of maybe a routinely reported aspect of our CT scanning. This may lead to something really interesting in the future. So, let's see and watch this space because I think this muscle loss is not only clinically important, but could be really interesting from a research and intervention point of view.

Richard ([19:58](https://www.rev.com/transcript-editor/Edit?token=tL_g58cGB2UUnMdQYsUmsCZru-I8qi5cqlEau2lW5Qw5oB4Ho7toDDS3tHDFXRbdyysul6N9grSy6fD3Ie235kakXWI&loadFrom=DocumentDeeplink&ts=1235.97)):

And now for the social media. What's hot in the world of COPD? Well, perhaps, literally, because COPD patients and the COPD internet channels are buzzing at the moment about wood-burning stoves. We've talked previously about biomass fuels and how this is important to COPD patients, particularly in low- and middle-income countries. But there's been an increasing issue with biomass fuels because of particulate pollution. A very interesting study that was produced by Public Health in the United Kingdom has shown a huge rise in PM2.5, that small particle pollution coming from domestic stoves, wood burning stoves. 38% were thought to be due to burning of domestic wood fuel and coal fuel. This is particularly a problem in cities. Is this important? Yes. It's more than road and industrial production added together. Roads only make 12% of this PM2.5 pollution.

Richard ([20:58](https://www.rev.com/transcript-editor/Edit?token=t_T6O0QYuyu3Gx5bda-jUm7egK1ZzotNppt8T0AarIih9b2z7xzfOxif76sgvXGip1nhhh5A9Io0IaNbi6xAMvnp5Ok&loadFrom=DocumentDeeplink&ts=1295.24)):

And this pollution is particularly harmful for those with pre-existing lung condition and indeed heart condition. This has got global interest in Chile, India, Japan, China on the internet with actually significant comments and concerns actually by the patients out there, saying they can certainly smell the smoke and are very much aware and concerned about this pollution. It's certainly also on social media caused some controversy with the stove industry. They're saying we need to use more modern stoves and dry fuel. But actually, not everyone can do that. And with COVID and the loss of income for many people, people are burning more wood for their fuel.

Richard ([21:35](https://www.rev.com/transcript-editor/Edit?token=Ujjyvqrrsfyum1H-ZuWYWuxptKEvmXumRKhX438hePxZyL-Nsd9hwdWU0Zboi8uW6RC07V3-uYEqAKp_FqHfvx0_KI8&loadFrom=DocumentDeeplink&ts=1331.98)):

So, we need to watch out for this and people with wood-burning stoves at home and COPD need to be careful about how they use them, using the best and optimal wood, but also be careful of this level of pollution that they may be exposing themselves to. So, thank you for joining me for this edition of Medical Insider COPD Podcast by Boehringer Ingelheim. It's been a great pleasure bringing you this episode, where we've listened to Jenni Quint and also unpacked a couple of important things that are new to the world of COPD. Look out for the next edition of Medical Insider COPD Podcast, and also check out our series. There's lots more information to discover. And remember, let's treat our patients better out there.