3M Transcript for the following interview: Ep 66 – Julia Norris, Workplace Health Monitoring

Mark Reggers (R) Julia Norris (N)

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Welcome to the 3M Science of Safety podcast presented by 3M Australia and New Zealand Personal Safety Division. This is a podcast that is curious about the signs and systems of all things work, health and safety, that keep workers safe and protect their health. I am Mark Reggers, an occupational hygienist, who likes to ask the questions Why, How, and Please Explain. Whether you are a safety professional, occupational hygienist, or someone with any level of WHS responsibility in the workplace, maybe you are a user of safety products or maybe you are a bit of a safety nerd who finds this stuff really interesting, then this is a podcast for you.

Welcome to the 3M Science of Safety podcast. I am Mark Reggers, an occupational hygienist, who likes to ask the questions Why, How, and Please Explain.

(R) Today, we're talking about workplace health monitoring with Julia Norris. Welcome, Julia.

(N) Thank you very much.

(R) Great to have you back. For those who haven't listened to the previous episode that we did about who are the AIOH, can you please introduce yourself, who are you and a little bit of your background, if that's okay?

(N) Absolutely. So, Mark, I like to think of myself as a preventative health specialist. So, I started my career as an occupational hygienist quite some years ago and I absolutely loved that profession. I'm passionate about preventing workplace ill health. But part of my growth and development really made me start to think how I could actually influence worker health a little bit more, and how I could have more of an impact. And I decided that part of that was actually expanding my knowledge and my experience. So, I decided to go back and study medicine. I went back and studied medicine part way through my career as an occupational hygienist and obviously got my fellowship to the Royal Australian College of General Practitioners and people asked me why I chose general practice instead of occupational medicine. And once again, as I said, I'm a preventative health specialist. General practice is preventative health and so is occupational hygiene, and I feel the two skills really complement each other. So, that's how I've come to fall into this position of doing a combination of hygiene and medicine and really focusing on the prevention. So, I'm the Medical Director at Occuhealth, which is a consulting company in Western Australia. Occuhealth was originally a purely hygiene consultancy, but now also incorporates the medical aspect of occupational health as well, and we really focus on health monitoring. We don't do the traditional pre-employment medicals very often. We really do like to try and focus on the prevention and really incorporate risk-based medicals. We incorporate the hygiene aspect and the medical aspect within the same organisation and for the same clients. So, when we are offering health monitoring, we are actually basing that on the risk assessment and the exposure monitoring that we've taken, and that really guides where you focus your attention.

(R) It certainly helps close the loop under one roof, which sounds pretty good for the WA customers over there. So, what is health monitoring and why is it so important to a workplace?

(N) Well, look, unfortunately, many workplaces in Australia and around the world do deal with hazardous materials and chemicals and compounds that can actually cause ill health. So, health monitoring is really the process of checking employees' health over time, when you know that there's a potential they've been exposed to a hazardous material. So, what you're looking for is specific health effects that may be attributed to an exposure to that hazardous material that they work with.

(R) Are they different types of health monitoring, or is it different parts of the body that may be affected by all these different chemicals or things they've breathed in or exposed to?

(N) Definitely.

(R) So, can you explain the types, if there are different types?

(N) Yeah, look, definitely. Obviously, the type of health monitoring very much depends on the type of exposure that the worker is getting. So, you may be looking at a physical effect from exposure to something like silica, in which you would be focusing on the lungs and the respiratory system whereas something like lead, for example, is something that's absorbed into the system and you can detect it in the blood. So, when you were doing health monitoring for lead, you are looking for blood lead levels, but you're also looking for the end effect of that lead on the individual. So, you may be looking at their blood counts and their haematological system which is what can be affected by lead.

(R) If a worker doesn't know what they've been exposed to, can they still be assessed from a health check point of view? Obviously, you've just mentioned a couple of specific chemicals, but what if you don't know what they've been exposed to?

(N) That's really tricky and that's where you probably need to engage a really good occupational hygienist to come and have a look at your workplace …

(R) True.

(N) … and figure out what you've been exposed to, because health monitoring really is quite targeted to this specific exposure. So, we can do a generic health check, but if we know that you've been exposed to something particular, then we can really focus our examinations. So, as I said before, if we know that you're exposed to something that causes effects on the lungs, then we're more likely to do you spirometry, chest x-ray or further investigation of the lungs, and focus our questions on respiratory symptoms, as opposed to if you're being exposed to something like lead … I'll stick with my examples … which may affect your haematological system. It may affect your kidneys. So, we're not going to put you through a chest x-ray when we're looking to monitor your health or exposure to lead.

(R) How do you determine what's on-the-job versus off-the-job exposures when it comes to a health monitoring point of view because obviously, off-the-job exposures, depending on people's hobbies … when you think about noise, being in a rock band or maybe you're making lead sinkers in your back yard that you probably shouldn't be? But how much does that have an impact when you start talking about health monitoring and the different types?

(N) It absolutely affects the worker and you've probably heard of the concept of total worker health that's been talked about in the last few years, because everything we do affects our health whether it's at work or not. Our body is non-discriminatory and it'll have the same effects whether you're exposed to something at home or at work, and noise is the classic example for that one. A lot of people are exposed to noise at home and often, in much higher levels than what they would be exposed to work. The key is taking a really good history. In medicine, there's an old adage that says most of the diagnosis is made on history and it's absolutely true. So, it's really important that you understand the worker's medical history, their occupational history, and also their social history, so you can get a really good picture of what their exposures might be. When we carry out health monitoring, once we know what the exposure is, we can really tailor the tests that we do, as well as asking the right history. We can tailor the examination and the sorts of investigations and tests that we might do. So, they might include biological monitoring and if we use our lead as the example for that, we do test blood lead levels, and that gives us a really good indication of whether the worker is being exposed. With lead, we're monitoring exposure during lead tasks, so we can see if the levels are increasing and if they are, we've got a pretty good idea that the controls that they've got in place to minimise exposure aren't working. So, biological monitoring can be really useful. There's also something called biological effect monitoring, and essentially, it's used for the same purpose, but people confuse the two. And biological effect monitoring is really when we're measuring for the effects of the substance rather than the substance itself. An example of that might be with organophosphates, when we're measuring the red blood cell cholinesterase level, and that gives an indication of whether people are being exposed to organophosphates or not. Other things we might do a very classic test; we do a lung function test, so spirometry, chest x-rays and obviously as I mentioned before, it's really important to target your history and your examination.

(R) Is health monitoring invasive? How safe is this for the individual worker? You're talking about getting bloods and stuff. How does that aspect for the worker go?

(N) Yeah, look, the most invasive test you would probably undergo would be a blood test. We also collect urine to check for chemicals and metabolites in urine sometimes. Generally, that's the most invasive it will get and for the majority of chemicals, you really don't need to do regular blood tests. Lead would probably be one of the few that you have to do blood tests on a regular basis.

(R) Is health monitoring legally required or is it a best practice type situation for workplaces to do?

(N) There certainly is substances that are legally required to be monitored, so people working with things like asbestos, silica, lead. Those things are written into legislation, and look, every state has different legislation. In actual fact, we have the enviable position of having two legislators in each state, one for mining and one for general construction and industry. So, each of those regulations will mandate monitoring for a certain list of chemicals. So, wherever you're operating and whatever state you're in, it's really beholden on you to check out your local legislation and see which chemicals or which hazards require health monitoring.

(R) Now, there's thousands and thousands of different chemicals out there. Can you list a couple of ones that may be legally required? I'm sure there's a lot of common ones between the states and territories, but can you mention a couple as examples?

(N) Yeah, look, the most common ones that people would know would be your asbestos, silica, lead, mercury, things like isocyanates, which used to be very commonly … very high content in paint. Those are probably the more common

ones that people would know. But Safe Work Australia do put out a guideline which gives a list of hazardous substances that require health monitoring. That was published in 2003 and that's a really good guide for the main chemicals, and most states include those chemicals and you may get a couple of variations from state to state.

(R) Are there situations where health monitoring would be recommended, even it isn't something that's legally listed in some of those regulations? So, how does a workplace determine that situation, where it's not listed, but they should probably be doing it?

(N) The regulations are very clear on this. If there is a significant risk to a worker's health when using, handling or storing a hazardous material, then the workplace should provide health monitoring. So, even if it's not on that list of mandated chemicals, if there's something that we know people work with and we know it causes health effects and we know that there is a significant risk of their exposure, then they should undergo health monitoring.

(R) So, how does a workplace determine what is a significant risk, to use that term that you just used, because obviously that can be a very subjective thing, depending on the workplace, the people doing the assessment? How do they figure that little statement out, to know whether that is a significant risk?

(N) Yeah, look, there's lots of information people can use but essentially, you need to know the nature of the hazardous substance you're dealing with. So, the SDS is a really good place to start and have a look at what is it that you're actually dealing with. Then you need to have a look at the health effects of that substance and the severity of them and then what is your risk of exposure? So, how much exposure are you likely to get? And that's generally a combination of how often you use it, how long you use it for, and what the level of exposure is. And in all honesty, if

you're dealing with something that's quite hazardous and you don't really understand it, you probably should get some professional advice and an occupational hygienist would be a great place to start.

(R) And those occupational hygienists, they'd be able to, help you assess those situations which then would lead into what type of health monitoring tests may be required. Is that how that link would work?

(N) That's correct. Yeah, so really, health monitoring is a combination of things and you really can't do health monitoring without having done a health exposure assessment or a health risk assessment first. The way the process works is you need to identify what you're being exposed to. You need to identify if there's a risk of exposure, and then that information then needs to inform your health monitoring program. So, it's really important that whether you do the assessment and decide there's a significant risk, or whether you get an occupational hygienist to do it for you, that that risk assessment and that information is given to the medical practitioner to say, "This is what the person's being exposed to and this is what we think the risk of exposure is," because as a doctor doing the health assessment, I can't really do a good assessment if I'm not sure what I'm looking for. So, it's really important that it is a continuum of information that's passed along and that the risk assessment and the health monitoring are not done in isolation.

(R) You have no idea what you're looking for, tests to look at potentially, so it's a big gap if there's not that linkage between the assessment and the exposure to the health practitioner.

(N) That's right, and look, it is written into the guidelines and the regulations that the PCBU, which is an acronym for person conducting a business or undertaking ... so in the legislation and in the guidelines, it does specify that a person conducting a business or an undertaking must provide the medical practitioner who's carrying

out the health monitoring with the information that they've used to decide that there is a significant risk. So, that risk assessment and that exposure assessment does need to be provided to the medical practitioner under law, but it's also just really good practice.

(R) It just makes sense, doesn't it? If you're going through that process, you want that information to flow through.

(N) Absolutely.

(R) Do those guidelines say how often health monitoring should be undertaken, or does that depend on the hazards and the risk, under that significant risk assessment?

(N) It certainly does and it does vary from hazard to hazard, or chemical to chemical. So, once again, if we stick with our examples that we used, because they are very common, lead; it's very specific as to how frequent lead monitoring should be undertaken. So, before a person starts in a lead job, they should have a baseline health assessment, so they should have a full assessment of their background medical conditions, their working conditions, the nature of the job they're doing. They generally have some basic blood tests to check that they don't have any underlying conditions, and they also have a baseline blood lead level.

(R) So, when you say 'baseline', you're saying to get that number before any exposure has happened, so when they've had exposure, so they've got something to compare pre-exposure to post-exposure. Is that what you mean by a baseline assessment there?

(N) That's spot on, absolutely. So, the baseline is before you start working in a lead job. So, once you start working with lead, you then have to have a blood lead level

four weeks after you start, and then depending on what that level is will depend on when you next need your blood lead level done. It's very specific and there are certain cut-offs above which you cannot work in lead. So, once your blood lead level gets to a certain level, and those levels have just recently been changed, then you need to be excluded from lead work until your blood lead level comes back down again. But for a lot of other chemicals, it's not specified. Essentially, you need to have, once again, a baseline health assessment, and then you'll have periodic health assessments, depending on what the risk of exposure is. So, for something like asbestos, if there is a risk of exposure, then they do recommend two yearly health assessments, because obviously health effects from asbestos develop over a long period of time. So, doing a chest x-ray every six months for someone exposed to asbestos is not going to add any value, and it's only got put more burden onto the employee.

(R) Can any GP or doctor undertake this health monitoring? You drive down the streets in most places across Australia and you've got GP practices on many corners. Can any GP do these types of assessments?

(N) Look, the regulations don't specify exactly the qualifications required, but they do say that it must be supervised by a registered medical practitioner with experience in health monitoring, and that before agreeing to participate in a health monitoring program, the medical practitioner should ensure that they have the necessary experience and competence for this work. So, essentially, the practitioner needs to be able to plan, implement and evaluate a health monitoring program, so you do need to know how the process works. You need to understand the chemicals that you are monitoring people for, and you also need to understand the health effects that they have and the types of examinations that need to occur. There's certain reporting requirements. So, as an AMP … is the acronym for approved medical provider … you do need to report back to the government. So, there's a lot of information that you do require before you can start doing these

health assessments. There is also some requirements around the medical practitioners who supervise these programs, evaluate them, and provide advice to other practitioners who are conducting health monitoring. They are required to be an occupational physician, so they need to hold formal qualifications as an occupational physician, but there are a lot of GPs who have a special interest in occupational health, and they've done short courses, or like myself, come from a background of occupational hygiene and they have got the experience and knowledge and competency required to do health monitoring. But they don't necessarily have the formal occupational medical qualification required to supervise and provide advice to other practitioners.

(R) So, health monitoring is done off-the-job, after an exposure, sometimes called as a lagging indicator. What would you say to workplaces to reinforce the importance of getting health monitoring done, even though it's not doing anything on-the-job, so to speak?

(N) Yeah, look, in a perfect world, we would control all exposures and we would be able to say nobody's exposed to anything in the workplace, in which case, we don't need to do health monitoring. But unfortunately, we don't live in a perfect world. So, the health monitoring really is a check that your controls that you have in place are working. So, we look at your exposure and we control it as best we can, but then we monitor you to make sure that you're not developing any early signs of exposure. And the idea of doing regular health monitoring is that we can pick up those signs really early on and then we can go back to the workplace and have a look at what you're doing, and make some changes. So, if I can use lead as an example again, if we were to do a baseline blood lead and your levels were negligible, really nothing detected, and we went back in four weeks' time and your levels had gone up to … let's pick a number … say four, and then we decided to do your lead level again in another six weeks and they'd gone up to ten, then we would probably say, "You're being exposed to lead at work." And we would go

back and have a look at what you're doing. Are you not washing your hands when you leave the work area and then you go and eat, and so are you ingesting small amounts of lead? Or are you biting your fingernails? Or is the respirator you're using not fully protecting you, or is it the right type of respirator? Or are you actually using a process that generates unnecessary dust or generates unnecessary contamination that's causing your lead level to be increasing? So, that's the value of health monitoring. Can we detect early changes that allow us to go back and have a look at your exposure and put additional controls in place?

(R) We've probably all heard those stories where workers have changed jobs, changed roles, and many years after the fact, a very negative … all these asbestos related diseases come to mind, but if you pick that up early, you'd have a lot more options, which is better for the individual. So, I think you've nailed it on the head there with the importance of a bit of a backstop that if it's not working on the site, we want to know as soon as possible to prevent not just that worker, but other workers as well. You think about large workplaces, that one worker may be helping the whole workforce as well.

(N) Absolutely, and as we know, most of the things we're exposed to are invisible. We can't see them and so, really, we don't know if you're getting exposed to things just by looking at your workplace, and it's very impractical to have continuous monitoring for most of things going all day, every day.

(R) So, if I'm a worker, and I've gone and done a blood test for my lead levels, what are the communication requirements that as a worker that I would be getting information about? I've gone through all these tests, so how critical is communication in this whole process?

(N) Look, communication's really important and the other aspect of health monitoring is it is an opportunity for education. So, when you have the employee

there in the office with you and you're doing your health monitoring, it's really good to feed back anything that you notice, or any questions that they answer and tell you about what they're up to. If there's anything that you can see may help reduce their exposure right then and there, we should feed that back to them immediately. Now, obviously, if there's anything abnormal in any of their tests, then that must go back to the worker immediately and they need to have further investigation. But even if it's all normal, if there's anything that's found on questioning around the way they carry out their job or any of their activities, then that information needs to be fed back to the business.

(R) So, then, make those questions and investigation of where do we go from here to ultimately protect the worker, or investigate the situation, whatever may have happened.

(N) Definitely, so when you do health monitoring, the approved medical provider does send back a report to the business to say, "Everything is good. Next medical is on this date." Or they might send something back that says, "Look, the results are all good, however, the worker mentioned that there's no facilities for changing into clean clothes at the end of the lead job, so there's a potential to take contamination. That needs to be investigated." So, there is a feedback loop. The information is fed back both to the employee and also the employer if there's any changes that need to be made to ensure that there's no risk of exposure.

(R) This is a very big topic. We are never going to cover everything, but if you had to summarise what we've spoken about to leave with our listeners, how would you summarise the importance of health monitoring in the workplace, and why it's so critical to have this in place when required?

(N) So, as I mentioned before, the Safe Work Australia guideline, Hazardous Chemicals Requiring Health Monitoring, provides really good detail on all of those

hazardous materials that have specific requirements, so it does outline what … it gives you a little bit of information about the chemical and it tells you what are the requirement for a health monitoring program. What assessments need to be done, what questionnaires, investigations and what report needs to go back to the employee and the business? The other document that is quite useful, and certainly to the medical practitioners, is Health Monitoring for Exposure to Hazardous Chemicals - Guide for medical practitioners. And once again, that gives the same list of hazardous chemicals, but it gives a little bit more detail about the medical requirements. The other thing that this document also lists is some of the chemicals that may not be legislated as requiring health monitoring, but would probably be a really good idea to monitor if there's significant exposure, and those are listed in that document as well.

(R) And I imagine most of the state regulators and territory regulators would have information on those specific state requirements as well, so do look those up, wherever you're based.

(N) Absolutely, so as I said, all the legislators have their own requirements. They're predominantly based on this document, and I think this document gives you the background and the context that the legislation doesn't necessarily. The legislation just really specifies what chemicals need monitoring and any specifics of monitoring requirements, whereas these guidelines do give you a bit of context and a bit of background to go along with it. So, I think the combination of checking your local legislation, and reading the Safe Work Australia guidelines will give you really good background on what your requirements will be.

(R) Now, if our listeners want to get in contact with yourself or Occuhealth, what would be the best way to do that?

(N) On our website www.occuhealth.com.au and we would get back to you as soon as we could.

(R) Easy as that. Well, thank you so much. This is certainly a topic I didn't know much before, but I've certainly learnt a lot, so thank you so much for coming in once again, Julia.

(N) You're more than welcome. Thanks for having me.

(R) Thanks for listening, everyone. You can get in contact with the show by sending an email to scienceofsafetyanz@mmm.com. If you have any questions, any topic suggestions or you'd like some assistance in the workplace when it comes to PPE, 3M are certainly here to help. You can also visit our website, 3m.com.au/sospodcast for further resources on the health monitoring topic that we've discussed with Julie today, as well as the transcript of this conversation. Be sure to subscribe and share through Apple Podcasts, Spotify, Google or wherever you get this podcast from and as Roger Staubach said, "There are no traffic jams along the extra mile." Thanks for listening and have a safe day.