This is a transcript of a webinar given by Therapeutic Radiographer and lecturer, Jo McNamara, as part of the RTUK series. The talk was aimed at radiotherapy professionals but contains advice and ideas useful for people wanting to prehabilitate or rehabilitate before or after radiotherapy. Some parts of the transcript have been edited.   
  
Thank you so much and it's an absolute pleasure to be here this evening. I am absolutely delighted to be a Radiotherapy UK Ambassador. I love the work that the charity stands for and all the work that you're doing to support the workforce. So thank you very much. So if we can move on to the aims of the slides. So in true lecturer style, and I just want to kind of go through what you're going to experience this evening, which will hopefully be informative and enlightening for you. Please be aware that for anyone listening who is potentially going to go through radiotherapy or has gone through radiotherapy, some things might be slightly triggering. And if you are affected by anything that I say or any of the questions and answers within the chat function, please do let us know and we'll be able to offer you support at the end.  
  
Please be aware that the information that I'm presenting is evidence-based and I’ve utilized lots of literature and research within my talk. But please be aware that there are variations in practice across radiotherapy department and it is always best to speak to your healthcare team as you're going with the radiotherapy. So the presentations been written with health care professionals in mind, but that doesn't mean that hopefully if we have any patients listening to this talk that there won't be things that you'll be able to take away from it. And I recognize that in the way that I talk, sometimes I might refer to patients. And I just want to be aware that that's just what I'm doing for this talk.  
  
But I also appreciate that sometimes people don't like being called a patient. And I just want to recognize that in the same way that I'll also be talking about therapeutic radiographers. And I know that potentially we might have radiation therapists who do the same job, just have a different title listening in the audience. So I'm going to use my HCP registration title, just in terms of the terminology that I use.

So this slide here you will see that the National Cancer Patient Experience Survey, which is essentially for cancer patients to give feedback around the care that they've received. So the feedback is really important for us to understand where care is working well and also where it needs to be improved across England. And the results of the survey are actually available to service providers and it's a great way for you to actually engage with that feedback to see about how potentially you might want to change services. It's really pertinent to consider how patients experience of cancer varies according to their individual circumstances and the type of cancer that they have. And also, you know, the data reveals very much about different people's experiences of cancer care. And having visibility of these differences is important because actually when we start to think about prehabilitation and implementing it into practice, we need to be aware of maybe health inequalities that exist.

So for anyone working within radiation services, please do consider checking out your National Cancer experience survey or if you live outside of England think about potentially other variations in the data an experience surveys and essentially thinking about that whilst you're looking to develop and improve services. Next slide please. So preparing for radiotherapy, I would like to think that most people in the audience actually know what radiotherapy is, but I think it's always a great opportunity to just make sure. So radiotherapy is a very personalized high ionizing type of radiation that is produced using a linear accelerator and it's designed to damage cancer cells. It can destroy them, it can shrink them, it can affect the cell structure and essentially, it's the second one most widely used treatment for cancer and attributes to 40% of cancer cure rates. It is however underutilized, and I do not want to take the amazing message that Sarah is going to talk about at the end about what Radiotherapy UK is going to hopefully try and help to address this. But I think it is really important to consider that we're not utilizing radiotherapy as maybe we should be doing.   
  
So when thinking about how to prepare people for radiotherapy, we have to think not just about the patient but also about what the services are and potentially what the patient's gone through in terms of the service pathway. So delivering radiotherapy treatment alone in a silo potentially means that we're not able to extrapolate some of the chance interactions that we have with our patients at an undergraduate level. For therapeutic radiographers, radiation therapists, we absolutely learn everything about oncology, You know, I absolutely know at university, we do not just study radiotherapy. We are experts in the entirety of Oncology and yeah, actually what I typically see within radiotherapy department says maybe treatment radiographers not being able to utilize their skills about the other treatment modalities.

So it's really important for us to consider the entire treatment plan and how we can personalize that thinking about other treatment interventions that patients are experiencing. So as an example, think of patients who come to us prior to surgery, do we utilize that time to reiterate prehabilitation prior to surgery? I would anticipate that the answer would be no. A phrase I hear a lot from patients is ‘I've been told to wait and speak to someone in radiotherapy about radiotherapy.’

And actually you know a lot of the time that's too late to actually implement any prehabilitation or even adequately prepare patients. So could we work with our colleagues from surgery and chemotherapy to ensure that they know about radiotherapy and about the prehabilitation advice that potentially we may want them to share with patients and their families earlier on in the pathway.

Next slide please. So these little video clips here are essentially social media content that we've created through Rad Chat. So Rad Chat produces bite size social media to try and prepare radiotherapy and other radiation treatments offering information and support. So it's designed also to offer a wider MDT and CPD for therapeutic radiographers, and on Rad Chat Instagram page we typically see about 60,000 interactions a month and have daily messages from people asking about their radiotherapy, how they compare, talking about late effects.

And we're seeing a huge increase in how social media is being used to help educate patients. So many trusts now utilize social media to connect with their patients and provide information. We've learned a lot through our work with Rad Chat and I think it's important for anyone considering using social media about maybe how to use it appropriately. So obviously Naman and I, who I run Rad Chat with, we work within our scope of practice. You know if patients are asking us about things that we wouldn't do as a therapeutic radiographer we're really keen to make sure that our area of expertise is in radiation treatments and it's also really important as well to think about the medical and legal obligations that we have and the implications of giving false information.

So Naman and I have insurance to help support us if in any case and something were to unfortunately go wrong. So you know the impact of using social media has to be considered. But I think from our experience it's been an absolute delight to be able to support patients in this way and our advice would be to work with trust comms teams, you know communication teams are amazing.

What I would do is say suggest is that you know take them for a coffee bring them into the radiotherapy department because I promise you once they've seen the equipment they’ve met the staff, they've seen the impact that therapeutic radiographers, oncologist, dosimetrist physicists have on or radiotherapy patients. How would they not want to help you create social media? Also shameless plug if any patients or staff wants to collaborate with Rad Chat, we're always looking to help develop that social media content that we essentially provide. The concept of preparing people for radiotherapy in a range of methods is really important. So I've talked a little bit about social media, but actually we need to be really mindful about how people are accessing and digesting information.

So we need to be mindful of health inequalities, what access people have to devices, digital literature, you know, the average UK reading age is an 8. So when we are starting to think about how we educate people about what it's like to have radiation therapy, it's really important that you consider the terminology that you're using. There's also the concept of misinformation or misinterpretation. I absolutely know that. You know, I've had experiences as a therapeutic radiographer where I've given advice to a patient and they've taken it very literally. And you think, oh gosh, you know, I need to readjust how I may be presenting some of that information is also thinking about why demographics, so supporting people with learning difficulties, disabilities and also being able to access things in a variety of languages and making sure from that perspective that we're equitable.

I always thought I was a good radiographer. And actually working with Rad Chat, I've absolutely seen how talking to patients on a deeper level, I maybe appreciate now more things that could improve their experience, their well-being much more so than when I was practicing clinically every single day. And so we're in the process at the moment of writing and publication through Rad Chat about you know the implications of using social media and collaborating and working alongside patients. But there are some amazing projects that are already doing this. So we were involved in Radiation Reveal and there's also the Gynae Narratives.

So we had Lisa Ashmore on the podcast talking about a collaboration between Lancaster University in the northwest of England in the Clatterbridge Cancer Centre and how they're using the patient voice to drive service improvement. So some amazing work that again you might want to look at.

So I'm going to move on now to the crux of what it is that we we've come here to talk about today an essentially we're going to look at personalized care. So personalized care simply means that patients have more control, and choice, when it comes to the way they're actually cared for and the way their care is actually delivered. So taking into consideration maybe some of their needs, preferences and their circumstances as well.

So complexity and uniqueness of an individual will absolutely need to be taken into consideration by the healthcare team. And that can evolve over the course of the treatment pathway. It's also become apparent and it's definitely fundamental to the way that we're offering care now within the NHS. But choice is important. You know when you get a cancer diagnosis, often the choice of things that you want to do in life are taken away from you. So it's really important to think about how we can actually embed choices for our patients in every day care that we deliver.

Simple things that I've learned about is would a patient like a gown or would they much prefer to be in a vest top when they come for treatment. You know it's very simplistic things like this, but it has a real effect on patients and their experiences. Personalized care represents a real practical change within the NHS and it's almost palpable really in terms of some of the things that are evolving as a result of that. So when we think about radiotherapy and put that into context, we thinking not only about the personalized technique that we may be using for our patients,

but we're thinking about the time of their appointments. You know are they able to work when they come for radiotherapy treatment, are we able to facilitate their family accompanying them? Do they need to be an inpatient, you know, there's all sorts of things that potentially we might adapt so that their radiotherapy treatment can be personalized and choice and decision making often can empower people and that's outlined repeatedly through the NICE guidelines and is something that we should be doing as a standard.  
  
The draft cancer packs are about to go live, which is really exciting. And actually the promotion of personalized care and physical activity is integrated within that. So it will be really exciting to see what happens as part of the general election to see how these get actually facilitated through those cancer alliances. Next slide please. So what is prehabilitation? I've talked about it a few times now. So prehabilitation enables people with cancer to prepare for treatment. It promotes healthy behaviours in order to hopefully maximize any emotional resilience, but also hopefully improve long term health. So not only will prehabilitation hopefully empower people because they'll know what to expect, they'll feel prepared, but also to enhance their own physical and mental well-being and also thinking about longer life.

You know, it's amazing now that we have treatments that will cure patients’ cancer. And it then means that actually we have the opportunity to develop positive lifestyle changes for our patients that will ensure that they don't have other comorbidities later down the line.  
  
And one of the phrases I hear a lot of people in prehabilitation saying is that, you know, you wouldn't run a marathon without training. It's a phrase that we often coin and it's exactly the same. I would say having a cancer diagnosis and going through cancer treatment is harder than running a marathon. And so, you know, why would we not put exactly the same amount of training and support into getting someone through that journey as we would for Marathon? I've got friends running the London Marathon and they are well into their training and we're only in February. So, you know, we kind of need to get behind this prehabilitation, see the advantages of it.  
  
I'm really biased because I teach prehabilitation and I've seen the effects of patients who've had really good prehab and the impact that it has on their lives, but also their families’ lives if you're living a healthier lifestyle. And I certainly know, you know, my child sees me exercising, so yeah, I might go for a run as well or yes, I'll go come out on my bike as well. So you know, simple health step style changes can actually affect the entire family as well.   
  
So for anyone who has ever looked at prehabilitation will probably be familiar with this diagram. It's quite a famous one by Macmillan Cancer Support and essentially this diagram looks at that continuum of prehabilitation treatment and then rehabilitation. So pre hub has the power to ensure people are less vulnerable to the side effects of cancer treatment so that they are as healthy as they possibly can be physically and also psychologically because we often forget that aspect of care. And then people with cancer who have that poor physical and or mental health are known to have less treatment options available or maybe being more vulnerable to the adverse effects of some of the cancer treatments and also thinking about long term health prospects, they may also be worse for those patients.

So prehabs are always going to sit within that broader context of health improvement for people with cancer and that could also include things like smoking and alcohol cessation. It might be things like medication review, management of long-term conditions. And I would say you know even for me as a therapeutic radiographer, I wouldn't necessarily always think about those things day in, day out when I'm treating patients.  
  
But having that prehab started to be instilled in what we're delivering that is something that potentially we might start to do. Prehab's always been a consideration in surgery. You know if you speak to anaesthetists, it is their bread and butter. So it's part of what they do and you know it's well implemented into that pathway. However, the true impact on patient health and prognosis is now starting to be seen across other health care interventions. And when it's implemented across different pathways by different health care professionals and part of a much wider team and preparing people ahead of treatment it’s hopefully going to have lots of effects but some of them could be about reducing post treatment complications.

So we're very fortunate now in radiotherapy that we're seeing the development of late effects clinics. If we're doing more work for prehabilitation will that have an effect on those late effects? Hopefully and potentially the prehabilitation gives us an amazing opportunity to provide a teachable moment. So for things like smoking cessation and alcohol cessation, you would typically think that a cancer diagnosis and going through cancer treatment is not the right time, but actually when do you ever have the support of healthcare professionals every single day? You don't. And so actually it's a perfect moment for us to start to educate patients and support them at the hardest time possible and to also deliver that teachable moment.

Rehab has the ability to enhance quality of life. It could improve nutritional status, improve cardiovascular fitness, an improved mental health and also it could put mechanisms in place that maybe patients haven't had or won't have if they didn't have that kind of prehabilitation engagement.

It is important to consider screening. So for anyone who's maybe working within a radiotherapy service who's thinking about, OK, this all sounds great, Jo, let's implement it. And there are things that potentially you need to consider like screening. So you need to be able to screen the patients to think about do they need universal prehabilitation. So that's kind of what I'm talking about today. Do they need targeted and that's maybe specific things that patients need that's very personalized to them, or do they need specialist in intervention? So do they need a physiotherapist?

Do they need a psychologist for that specialist prehab on completion of pre health screening? We also might need to make sure that actually that's communicated to the Multidisciplinary Team and that we are actually documenting that. So that way then we can measure impact but we can also compare and contrast those interventions. So there's lots of tools which I don't unfortunately have time to go into, but one of them is something like a sit to stand test and that's something that potentially is quite easy, easy to implement as a screening tool. So let's have a look at how we're going to implement prehabilitation into radiotherapy, physiotherapy and so on.

People undergoing surgery will typically see a physiotherapist if they're lucky and or they may have the leaflet that the physiotherapy professional or the nurse hands to them and says right OK this is what this is. Obviously we need to consider that that's often in a literary form. We also need to think about is that when the intervention stops? So you know the physiotherapist comes in after surgery hands over the leaflet and maybe shows a few of the exercises and then says ;on your way good luck if you need anything else then by all means get in touch; but we know it's not easy necessarily to be able to access that kind of support afterwards. So you know, at what point do patients get advised about specific exercises, again to help them cope with radiotherapy positioning.

Kat Tunnicliffe from Percy Health, who I've got there on the screen, actually collaborated with us for Rad Chat. And we haven't got time to show the video today, but she's done a whole series of videos that essentially shows how we as therapeutic radiographers can support our patients whilst they come in for treatment to learn some of the exercises that they should be doing. Now you know for breast cancer patients specifically, you know the shoulder dysfunction is something they quite often will see later on in life and as a consequence of that they may need to keep these exercises up for life.

So Kat’s tip is always brushing her teeth and doing your shoulder exercises are absolutely key. But it's tips like that, practical tips for patients that could potentially have a life long lasting effect and improve their quality of life and stop them from going on to develop maybe some of these pathologies. So do you know in your department, do you know the physio who sees oncology patients, have they ever visited the radiotherapy department? Do they know the positions that we're trying to get our breast cancer patients in or do they know about maybe some of our bladder or bowel preparation that we are asking patients to do. You know every patient depending on where you're having treated will have a very personalized radiotherapy and actually for some physiotherapy might not be required, but for some people it could absolutely be an intervention that's required. Does it need to be the physiotherapist that actually initiates that intervention? Could it be us as therapeutic radiographers and especially for again reiterating to patients they may have had lots of dealings with their physio but during radiotherapy they don't. So could we be that voice to hopefully help stimulate their motivation to continue doing those.

It's also really important to consider the role of physio across lots of cancer sites. We know from the data, from the patient experience data, that people have different experiences depending on where their cancer is, which is you know it is an inequity that we need to look at and much of the information is available quite freely is quite commonly associated with breast cancer and also prostate cancer. So it's starting to think actually what support and interventions are there for our patients who have head and neck cancers.

You know is there anything for our young adults or paediatric patients. It is important to kind of think outside the box and think about what else is available. We had Isla Veal, who’s a Macmillan specialist oncology physiotherapist who works at Guys and she is incredible. She has just worked with her cancer alliance to create a series of videos across all the different treatment sites. And as a therapeutic radiographer, and for anyone working in oncology, they are brilliant in teaching you how to support patients with specific exercises.  
  
So the next thing I'm going to talk to you about is skin care. So we were quite famous, I would say, for talking about skin care a lot, largely because of the amazing work that Naman Julka-Anderson is doing at the moment around health inequalities. And I have learned absolutely loads about the skin and I used to teach there, still do teach the skin or the integumentary system as my students know it. But actually it's really important because you know, it's, it's a side effect that a lot of our patients are going to experience. And I would consider that a lot of people listening. If you are working within Oncology, you're probably pretty au fait with the skin care and instructions that you would give to patients.  
  
However, what I would say is that not everyone is necessarily thinking about utilizing the Society College of Radiographers skin care guidelines. So you know making sure that your department is using them is a really good way for you to start to think about prehabilitation and when the patients get this information and something that I find really interesting is about behaviour. I think it's the A-level psychology student in me, my teacher would be very proud. But actually it's about the opportunistic health behaviour advice that as health care professionals we give to patients and hopefully you know in a daily reminder to our patients to change their actual behaviours. And so it's important to give simple advice, so quite basic advice on how to make maybe those healthy actions and turning them slowly into habits. So things like skin care is a really nice easy way to almost mention every single day and to ensure that patients are doing it and creating that habit.

And it is typically associated with something called behaviour change management and there are some amazing tool kits out there. So if it's something that you're interested in, definitely go and have a look at it. But advice for creating habits is easy. I think in radiotherapy because we're seeing them so frequently, research suggests that to create a habit you need to do it for 66 days. So you know for a lot of our patients we're not having that extended period of time with them. But if they are going through surgery all the way through to then get to us in radiotherapy. Could we be liaising with the wider multidisciplinary team to offer patients advice after their surgery on maybe wound care thinking ‘you know if you're going to go for radiotherapy you might want to start with this kind of skin care’.

A lot of clinical nurse specialists who see oncology patients after surgery advise them to use bio oil. So you know some guidance from the clinical nurse specialist about the fact that they would want to stop that before going for their radiotherapy is useful information. But again, it's around that cross pollination and that we see within the different disciplines and so definitely check out the Society College of Radiographers skin care guidelines, see if it's something that you're definitely sticking to within your practice. And I'd also suggest checking out Naman’s work because he's looking specifically at the assessment of radiotherapy, skin reactions on people of colour. And it's an area that we definitely need to see a change in practice, right. So the next slide is about physical activity. So this is what people typically associate with prehabilitation. When you say prehab, everyone goes ‘oh she's going to talk about running’. Now I might talk a little bit about running, but you know that's not essentially what prehabilitation is. If you take nothing away from today, I would love you to consider the role that physical activity can play in cancer care.  
  
I love to advise people about the kind of the role that the activity can have and it doesn't have to be exercise. You know, the terminology that we use can actually affect how patients feel about what the advice that you're giving them. If you say all you need to do very aerobic exercise, you'd probably see a lot of them eye roll and go, yeah, that's not going to happen. So it is about how we pitch things to our patients. So someone coined the term of an activity snack. It's not my idea of a snack. I love a bit of banana bread, but an activity snack is a great way to think about it.  
  
So the research suggests that every 30 minutes you should be standing up for 5 minutes. Now that sounds quite a lot, but actually it has a significant impact on lowering blood sugar and also our blood pressure. And compared to those who sit continuously and I know from COVID times, you know, we do a lot of sedentary work. Now, we do lots of things virtually. Are we being active? Are we stopping ourselves from being sedentary? The Department of Health and Social Care has recommendations specifically on physical activity. And the current guidelines are that it advises that healthy adults do one of the following every week. OK, so wait for it. There's 150 minutes of moderate activity. So this means activity that's going to make you breathe harder, get your get your heart racing an, you know, 75 minutes of vigorous aerobic activity. So that's literally where you are panting.

There's also guidelines specifically around strength training, so resistance training and building muscle. That's really important for our cancer patients, especially those who were on hormone therapies and also about balance. So this is something that I promote a lot with older patients. So you know, there's lots of research around frailty, but there is a little test that you can do and I want you all to have a go at it tomorrow. When you go and put on your work shoes, I want you to balance on one leg, bend down, pick up a shoe, put it on and tie your shoelaces, but without putting your foot on the ground. So just balancing on one leg, have a go at it. We should be able to do that activity till we get really old and unable to stand properly.

So 92% of cancer survivors prefer to receive guidance from their providers, which is really interesting because it depends on maybe who is offering that advice. You know, if they're in a gym or you know their friend Betty's told them all you need to do physical activity whilst you're going through cancer treatment. The likelihood is that maybe they're not going to take that advice on board. Actually if you’re in your uniform, you know you're looking after them through their radiotherapy, talk to them about physical activity and the guidelines and what is suggested to them, then they are much more likely to take that on board and consider that some of the terminology that we use is really important as well.

And if you look at the National Social Prescribing Academy, they use the term prescribing. And I think this is really important. This is something that we need to do. We need to prescribe physical activity. It's important to kind of note that obviously from the research, you know some people are going to find it really hard to motivate themselves to exercise and actually for those patients they may need more of an intervention around behavioural support. So you know how I was talking about behavioural change management, that might be something that you need to initiate

in more detail with your patience. Is that something that potentially you could do in continual professional development and start to implement?  
  
Swain et al in 2024 also published some information about physical activity being really effective for reducing pain, which we absolutely know sometimes our patients unfortunately will experience pain as a result of the radiotherapy that they're receiving. And so actually it would be great to be able to prescribe physical activity to help counteract maybe some of the pain that they're going to experience.  
  
So to reiterate, we need to be recommending aerobic and resistance exercise. It's going to reduce the toxicities of the cancer treatment that we're delivering, especially for things like fatigue. You know, back in the day when I was first newly qualified, I was heard saying every single day, take it easy, get lots of rest. It is now the worst thing that our patients can do. And actually it's starting to think about that personalization for each of our patients what could potentially they do that is going to ensure that they are able to make healthy lifestyle changes and potentially also counteract maybe some of the side effects of treatment. And there are also just be kind of aware that there were some interesting initiatives incorporating physical activity into treatment. So we've had patients that have come on the podcast before that talked about how they used a spin bike through their chemotherapy. And actually I think the more that we push to prescribe physical activity, we might see changes in our radiotherapy departments. You know the future might be that our patients aren't sitting in chairs waiting for their radiotherapy. They could be doing a physical activity, there could be a yoga class in a room.

To be fair, I think every space is always filled up with clinics or treatment, but you know this is somewhere potentially that there may be involvement of practice, especially when we think about radio biology and hypoxia and the impact that potentially exercising before radiotherapy might have. So the next slide talks about Me Against Cancer, and 5K Your Way. So I'm really lucky. I'm Yorkshire, regional lead for the charity.And It's a community based initiative to encourage those living with cancer and beyond for their families and friends as well, and to basically join a community where they get to walk, jog, run, cheer. Y

ou know, we've had loads of things before that patients can do, but it's an opportunity that the last Saturday of every month they get together. And actually I love doing it be 'cause I get to exercise, I get to talk to patients and I've had cancer as well. So I kind of feel like I see cancer care from both sides and as a consequence of that is really nice to go and talk to other people that have gone through the same thing whilst also talking to patients about their treatments. And I learned lots. So I would definitely highly recommend it.

So next slide, so nutrition, as I said, so regarding dietary changes and the guidelines out there state that there isn't enough evidence specifically to support recommendation for or against any specific diets. So our general advice is around making sure that people are eating a well-balanced diet with lots of fruits and vegetables and also recommending an increase in protein. So protein is needed for body maintenance, growth and repair and it's present in all of ourselves. It's absolutely fundamental for ourselves to work properly and as a consequence of that, trying to increase that when your body is trying to repair from radiation damage is really important. So some of the guidelines talk about the fact that if you have poor nutrition, it's going to impact negatively on physical function and how well you're able to actually cope with treatment  
  
And it might impact on quality of life, weight loss and weight changes, fatigue and also impaired physical activity. So one of the things I always remind myself is the fact that a lot of people have stereotypes of who is nutritionally healthy. So, you know, if you were to go out into the street, and I was to ask member of the general public to walk past people and tell me whether they thought that they were nutritionally well or not, you would typically think that someone very slim, someone who had big muscles, you know, they were going to be nutritionally well. Actually, we need to get rid of this stereotype because it isn't necessarily the case. And, you know, I've got a family member who absolutely lives off processed food and is the skinniest little thing ever. And people would quite often think that, you know, she's like a bird. So we need to be really conscious about the fact that actually who is malnourished and what support and guidelines can we give them, irrespective of stereotypically whether or not we see them as someone who would be well nourished or not. I also have to say that for people working in radiotherapy, we need to think about personalizing the advice that we give.  
  
So, you know, thinking about people's heritage, their cultures, a lot of life revolves around food. So I certainly know that I made mistakes. When I was working in clinic talking to a Southeast Asian woman about clotted cream, she had no idea what clotted cream was. I was like, increase your fat intake. You know, you might want to have mashed potatoes and put cream in it. And. And she was like, Jo, what is clotted cream? I've never even heard of clotted cream. So you have to be culturally sensitive and ask people what do they eat, what are the routine meals that they have? And how can you help support them to think about increasing fruit and vegetables and protein into their diet.

Food costs, cost of living crisis has hit us all hard and actually for a lot of our patients who might not be working or living off the disability allowance and you know, buying fresh food may not be an option for them. So thinking about offering them solutions, offering practical hints and tips, The other thing to also mention is around fluid intake. So increasing fluid intake is really important when patients are going through treatment. Obviously it depends on where we're treating in the body, but typically you know the fluids are going to flush bacteria from the bladder, they're going to prevent constipation. Staying hydrated will typically make sure that treatment side effects are less severe and therefore is going to lower the chances of our patients missing treatments or delaying cancer treatments.

So talking to patients about how they feel and whether they feel dehydrated is really important. So the signs of being hydrated could be, you know, feeling thirsty dry mouth or lips. So visually you might be able to see if you think your patients look dehydrated, headaches, dizziness, sleepiness, you know, decreased activity or energy, low blood pressure and increase body temperature. You know the key signs that potentially someone is suffering from dehydration and also offer alternatives. So not everyone likes drinking water. So you think about, you know, could people have squash? And also advice around alcohol and reducing caffeine is really important as well. My Nana absolutely lived off of cups of tea. So you know for me to try and hydrate her by getting her to drink lots of water was difficult but we managed it by talking about maybe introducing fruit juices or sparkling water and things like that. So it's just having those conversations and offering that advice and I think personalization is just absolutely key.

So we often pay significant attention to the physical and biological implications of the cancer and its treatment. And actually I'm really passionate about using the biopsychosocial model. So when I think about the biopsychosocial model, I have to consider mental health and mental health. It may be something that people have never struggled with, but now with a cancer diagnosis and going through treatment, it's something that they really start to struggle with.

So one of the things I would suggest is thinking about using a tool. And so the UK mental health triage tool is a is a good tool to use and kind of ask patients questions about how they are feeling and then that gives you an indication of maybe what intervention you might want to use with that patient. Also remember that mental health disclosures, very personal. You know, there is still unfortunately stigma around mental health and not every patient is forthcoming about how they're feeling and coping emotionally. I think anyone who works in radiotherapy will be familiar with the patient who says they are absolutely fine and then are in floods of tears because actually they are really struggling emotionally with everything that they're going through.

Doctor Laura Charlesworth conducted a literature review on severe mental illness. And again, this is an area that just is very under researched and she found that individuals with pre-existing severe mental illness and cancer have an increased cancer-specific mortality. And so you know it's a really complex case but what we need to know is that actually for anyone who is diagnosed with a severe mental illness needs to have prehabilitation in place early on and it's imperative that we do that and is that something that maybe we're screening for as patients are coming in to radiotherapy.

There are many counselling services available to patients although you know it is unfortunately a post code lottery in some cases: many free counselling services can be organized through Cancer Support groups. So the amazing work that Macmillan information and support groups do and Maggie's centres and there's also some free NHS counselling service telephone hotlines. Some organisations might charge but they have a sliding scale dependent on peoples’ financial situations. So finding out what's available for patients is really important.  
  
You can also go privately for counselling and the fees for that typically will range between £10 an hour to £80 an hour. So again kind of having some professionals who you can refer patients to and kind of give the details to knowing that they know about cancer and have experience of counselling people with cancer diagnosis.  
  
There's also mindfulness. So you know the definition of mindfulness is around the quality or the state of being mindful and that practice of maintaining that complete awareness of your thoughts and emotions at that point in time. And so mindfulness has been researched quite a lot now and within various aspects of cancer management and actually it's proving to be quite beneficial for cancer patients in reducing toxicity and stress. So again, that's something that again you might want to talk to your patients about.  
  
So next slide is around alcohol use. So it's the most preventable risk factor for cancers along with tobacco use and reducing body weight. So alcohol use actually accounts for about 6% of all cancers, and 4% of all cancer deaths worldwide. And yet people don't always necessarily know the link between alcohol use and cancer. So overall, the amount of alcohol someone drinks over time and not the type of alcoholic beverage seems to be the most important factor in raising that cancer risk. Most evidence suggests that it's actually the ethanol that increases the risk and it's not the other things in the drink, although actually the research is really, really scarce and so no conclusions can actually been drawn from that.

Alcohol also has the ability to absorb nutrients such as folate. And folate is a vitamin that cells in the body need to stay healthy. So that malabsorption of nutrients from people who maybe drink quite heavily could again have an impact on their overall health.  
And there is some research that looks at the effect of alcohol on hormonal regulation. So again, it may be a contributing factor for people with hormone dependent tumours. And there's also links between alcohol drinking and cigarette smoking. So it actually increases the risk and also has that contributing factor of worsening side effects of radiotherapy.

Moving on to smoking: and again research shows that smoking during radiotherapy and chemo radiotherapy is associated with worse outcomes and a higher risk of toxicity. It's one of the big things that anyone going for radiotherapy will be told by their therapeutic radiographer, their oncologist about the fact that if they are going to smoke during their treatment, their side effects are going to be significantly worse. I think one of the most striking pieces of research is by the Journal of Clinical Oncology. It was funded by Cancer Research UK and the study highlighted that for non-smokers the long-term risk

of death from lung cancer or heart attack caused by radiation (so you know what we're doing as part of radiotherapy is 0.5%) but for smokers increases to about 5% which is actually comparable to the benefit. So you know, it really is fundamentally the most important health decision that you can make for yourself in reducing your smoking. There's also lots of questions around vaping now as well. There's no good evidence that vaping causes cancer but E cigarettes are not risk free and I think it is really important to consider that you know the data and research around this. It is not yet collected and if you have never smoked you should not be using an e-cigarette. They were essentially designed to help people reduce smoking and the 13th of March is non-smoking day. So why not maybe utilize that as a as a time in the department to promote smoking cessation for patients and also maybe for staff as well. Next slide please. So this I'm really passionate about: talking about pleasure, sex, intimacy because it is definitely an area that I feel that as health care professionals we don't talk about enough. We often hear from patient through Rad Chat that, you know, patients didn't feel they were informed of the consequences of treatment. And I typically hear healthcare responses. And you know, mine's exactly the same going well. We did tell you, because it's on the consent form. But for anyone who's ever been a patient, you will know that there's so much information to take in in that consent consultation.

And, you know, knowing a statistic does not give you the kind of sense that, yes, I know what my life is going to be like with that late effect. It doesn't prepare you for what it's actually going to feel like and how subsequently you're going to deal with it. So it seems that people rarely receive information about pleasure and intimacy and even less about prehabilitation of the sexual organs outside of that consent consultation. So thinking about maybe any adjuvant treatments that patients are having and thinking actually, could we be utilizing the time that people start hormone therapy, but prior to coming for radiotherapy to actually start to give them this advice?

I also do want to do a big shout out to Will Kinnaird, who's doing a PhD on sexual dysfunction and works as a clinical advisor for Prostate Cancer UK and Samantha Evans who is an ex-nurse and actually supports lots of cancer patients.

And she runs a company called Jo Divine and sells lubrication and she has lots of lots of experience in that field. And one thing I would kind of talk about in terms of prehabilitation is maybe promoting masturbation is not something that you would maybe want to talk about with every single patient. You would have to personalize it but actually promoting masturbation especially for patients who are receiving radiation for maybe gynaecological cancers or male, male reproductive cancer, it can help with increasing blood flow, relaxation, reducing stress, helping with pelvic floor muscles.

It can help with sleep, alleviate pain and one of the coined phrases that again people use within kind of sexual dysfunction is use it or lose it. And it is definitely something that we suggest for lots of our patients. And Prostate Cancer UK also highlights that many men going through prostate cancer say that actually sexual dysfunction and relationships are the biggest issue that they have to deal with during their cancer journey. And so how can we as healthcare professionals try and lessen that impact?  
  
There's also amazing resources around queering cancer a OUTpatients UK. And so for anyone who wants support with talking to people from the LGBTQ plus community, please do make sure you check those out because they are absolutely fantastic.

So now the workforce, how are we going to look after you because you have to do so much and I'm telling you things that you might also want to add to your day-to-day activities with patients. But we need to look after you. So if we look at the next slide, I just want to remind you that actually is a HCPC standard of proficiency and that's recently been updated that you have to look after your health and well-being and seek support if necessary. So a piece of work that I did with Wang, Hutton and Pennington: we looked at actually why therapeutic radiographers or health care professionals don't offer prehabilitation advice. And there were lots of reasons. But one stood out for me was the hypocritical in nature of I'm advising someone on sleep hygiene or I'm advising someone on exercise and nutrition and not drinking alcohol. And I know that I do all those things. So we need to start practicing what we preach. So if we move to the next slide, I just want to give you all some helpful hints and tips and start to think about how you can look after yourself. So in the last year pressures across the NHS increase significantly. We see over the media every single day. Vacancy rates are at an all time, the high cost of living. You know NHS is having to cope with strike action, industrial action, demand for health care increases. Sorry, that sounds actually really depressing. I'm going to scrap all that. We know how bad the situation is unfortunately at the moment. So we need to make sure that we put our on our own mask before trying to help others. So knowing what to do for yourself is really important. Remember that it's not just GP practices that you can go to if you feel you need help and pharmacies are now absolutely equipped to help and support people, and even with mental health advice as well.

There's also something called the self-care forum which has some amazing self-help sheets and which again you could utilize or share with your family. And I would say about having a healthy team can really support team working and improve our own well-being more at work which has a better impact on our patients. So you know socializing, we know that women live longer than men because we socialize more. You know the research proves that having socialization is really important for us. So we need to think about that as well. There's a picture up there of some women walking, and actually that's the Western Isle Hospital and they have a walking group and they go out every single lunchtime. Maybe that's something we need to start initiating in our radiotherapy departments. And sleep hygiene is always something that I am on about to my students because I know they're watching Netflix on repeat until late! But it is really important. Be consistent. Go to bed at the same time each night, get up at the same time each morning, including weekends. Make sure your bedroom is a comfortable temperature. They usually say 2° less than what it is during the day. Remove electronic devices. Do not go on social media. Put your phone outside of your room,

Avoid large meals and caffeine before bed and stay physically active through the day. And also really important to hydrate yourself, remember to drink, you know, have a balanced diet or the advice that we've gone through is really important not only for our patients but for our self as well. The last thing I want to go through, so I apologize 'cause of time, but is the five simple questions as part of this personalized mental health action plan. It gives amazing questions that you have to answer and they’re personalized. So eventually once you've completed those five questions, it will give you a plan.

And that plan will essentially give you a full week e-mail and helpful reminders of what you need to do to help improve your mental health. So you know, if from today you are feeling overwhelmed at work, you know you're not sleeping very well. Try just taking these 5 simple questions, Think about, you know, how you can personalize your mental health action plan and hopefully start to adopt that.

So just to shout out to some of the resources that are available. So this is the Northern Radiotherapy Network information videos. They are absolutely brilliant. They are on prehabilitation all the way through to late effects. So please do go and take a look. There's also Radiotherapy UK. They have some new resource is coming soon. So absolutely save them in your favourites.

I also run an MSC module so for anyone who might be interested in doing some MSC study and it was Co designed with Macmillan and essentially that MSC module is for anyone, you don't have to have a first degree or a two 1°. It's very accessible and actually even accessible to people that work in maybe sports scientists or maybe work with patients in gyms and is really accessible. There's also Rad Chat so for every podcast episode that we do, we have associated reflective points, and we are continually professionally developed with CPD now, which is the SoC College of Radiographers.

And then for anyone who wants to develop their knowledge about maybe some of the interventions that I've talked about tonight, these are some really good ones. So there's the alcohol and tobacco brief intervention is also the National Centre for Smoking Cessation. And then there's also I absolutely love this. So if I was a leader in the NHSI would absolutely want to have a look at the final resource on the right. And that is basically looking after your team's health and well-being. And there is essentially a tool kit, but it is brilliant, and it goes through really practically things that you can do collaboratively with your team.

Thank you so much. So that's absolutely fascinating discussion. And also mean just running from the continuum you know of patient’s prehab potential impacts on the effects then also on the workforce themselves and the ability to look after

yourself to be able to help you better look after patients you know it's so important. So, thank you so much, so much information, so detailed. I think as you said, we will in the chat will sound like all the links as well for people feel the breeze up their leisure while we have you here. We're totally overtime. But that's ground because it was so fascinating.

Audience question: do you have any prehab to get people to relax as much as possible at the CT stage so that you can have an easier daily setup?

There’s an amazing resource called Respire. So if you were to just go on and Google Respire and it was set up by my amazing colleague Dr. Heidi M Probst and she essentially coproduced resources specifically for breast cancer patients. But they can be used by anyone going for their pretreatment CT scan and then subsequently their radiotherapy treatment and they were going to have something called deep inspiration breath hold where we have to kind of vary the breathing and specifically for that treatment. And so they created some mindfulness, breathing, relaxation videos and there's also some amazing videos of the procedure at pre-treatment and also treatment. But it's a great resource and whoever, I don't know who it was, I think it was one of my colleagues. But their voice is incredible because I just find when I listen to it, I instantly relax. So I would imagine that for patients it will be equally as relaxing as well. But it is, it is practice. So again, if you give it to a patient like the day before, Radiotherapy's pretreatment is not going to work. We need to be able to give this advice and support to patients well in advance so that they have time to digest it. Lives are busy, you know giving it to a patient the day before or at 00 appointment and then same right, you come in for treatment in two weeks time, quickly practice this, it's not going to benefit them. So you know, liaising with our colleagues may be further along in the pathway could be really beneficial.

Audience question: are all hospitals supposed to offer rehab?

We are doing a lot within radiotherapy services thanks to the amazing work of people like Lisa Durant and Emma Hallam. You know, there's some pioneers in supporting patients with late effects, but there is a postcode lottery. It doesn't exist in every single trust. Typically in radiotherapy we have always kind of delivered the treatment and then we didn't see our patients again. We don't, we never want to see our patients again because that means that you know we've managed to cure them.

Now what we're able to do and because of our scope of practice and the skills that we've developed is that we do kind of see patients, we do follow up and things like that. You know we've got amazing advanced practitioners that run radiographer review clinics and my advice would always be to phone the department and see maybe what is available for patients. But it is very you know, geographically dependent on where you live. Late effects clincics is definitely something there on the agenda. So I'm hoping practice will change in the future. Everyone should have a clinical nurse specialist as well. So you know, phoning your oncologist secretary might also be an option.

Unfortunately, we know that with radiotherapy it is the gift that keeps on giving. So even if you are eight years post treatment, if you have any side effects from radiotherapy, it is important that you get the support that you need. And that might be going through your GP and talking about the fact that you think this is a radiotherapy side effect or trying to track down your oncologist or phoning your radiotherapy team and asking for help and support. Please don't feel that you can't do that, because we would. As a profession, we would absolutely hate to think that people are sitting at home with late effects and they've got no one to help or support them.

Audience question: Is there any link between nutrition and skin integrity for patients undergoing radiotherapy treatment?

Yeah. So maybe I suppose it's about the integrity of the cells, not necessarily just the skin. So things, when we look at kind of the Physiology behind the molecules that form ourselves, is really important to think about the fact that it's made-up of proteins and largely water. So if your nutrition is poor, your cells are not going to be able to withstand the radiation damage as well.

So you know from our perspective keeping hydrated, having a high protein diet, having fresh fruit and vegetables to create those, you know deal with any of those free radicals, that is going to be what essentially is going to help and support our patients. So good nutrition is absolutely imperative for our whole well-being, including our skin.

And moisturize, moisturize, moisturize, get everyone moisturizing!

Further information including links mentioned in presentation slides:

MSc module on prehabilitation, rehabilitation and personalised care https://www.shu.ac.uk/study-here/options/health-and-social-care/short-courses-and-modules/msc-enhanced-radiotherapy-and-oncology

NHS National Cancer Patient Experience survey https://www.ncpes.co.uk/about-the-survey/

Rad Chat podcast on Instagram https://www.instagram.com/rad\_\_chat/

Gynae Cancer Narratives Project by Dr Lisa Ashmore https://wp.lancs.ac.uk/gynae-cancer-narratives/

Personalised Care Institute: resources for learners https://www.personalisedcareinstitute.org.uk/resources-2/

Cancer Alliances – improving care locally https://www.england.nhs.uk/cancer/cancer-alliances-improving-care-locally/

Macmillan Cancer Support prehabilitation resources https://www.macmillan.org.uk/healthcare-professionals/news-and-resources/guides/principles-and-guidance-for-prehabilitation

Perci virtual care clinic https://www.percihealth.com

Pelvic floor muscle exercises by Prostate Cancer UK https://prostatecanceruk.org/prostate-information-and-support/living-with-prostate-cancer/pelvic-floor-muscle-exercises

Society of radiographers skincare guidance for radiotherapy https://www.sor.org/news/radiotherapy/scor-updates-radiation-dermatitis-guidelines

Exercise, Diet, and Weight Management During Cancer Treatment: ASCO Guideline https://pubmed.ncbi.nlm.nih.gov/35576506/

NHS South East London Cancer Alliance Top Tips on Physical Activity & Cancer https://www.selca.nhs.uk/professionals/latest-guidance-and-resources/physical-activity

MOVE Charity https://movecharity.org

NHS Alcohol and tobacco brief interventions programme https://www.e-lfh.org.uk/programmes/alcohol-and-tobacco-brief-interventions/

Pleasure & Intimacy: A guide for people living with cancer https://issuu.com/fruitflycollective/docs/sex\_cancer\_book

NHS Your Mind Plan quiz https://www.nhs.uk/every-mind-matters/mental-wellbeing-tips/your-mind-plan-quiz/

Northern Radiotherapy Network https://northernradiotherapynetwork.nhs.uk/videos

PRosPer - Cancer Prehabilitation and Rehabilitation programme https://www.e-lfh.org.uk/programmes/prosper/

Sheffield Hallam Prehabilitation and Rehabilitation for people living with cancer https://www.shu.ac.uk/study-here/options/health-and-social-care/short-courses-and-modules/msc-enhanced-radiotherapy-and-oncology

Rad Chat podcast with episodes on site-specific care https://podcasts.apple.com/gb/podcast/rad-chat/id1585537896

National Centre for Smoking Cessation and Training https://www.ncsct.co.uk

Looking after your team’s health and wellbeing guide https://www.england.nhs.uk/publication/looking-after-your-teams-health-and-wellbeing-guide/#heading-8

Oncology Professional Care conference 2024 https://www.oncologyprofessionalcare.co.uk/2024-conference-programme