I'm very pleased to talk with you about a topic that's really near and dear to my heart which is promoting healthy sexual function in cancer survivors.

Okay, so the first question is of these options what steps should be completed at every encounter to assess sexual function? Okay, great, very good.

The next question is how common are sexual problems in cancer survivors? All right.

And the last one, what are the three main treatment strategies for sexual problems in cancer survivors? Okay.

So what I'm going to do over the next you know 40 minutes or so is review sexual concerns among cancer survivors, show you the results of two studies I've been a part of where we've focused on sexual function among breast cancer survivors in one study and among post-treatment cancer survivors, non-Hodgkin's lymphoma survivors and then I'll also talk about what we know about evidence based treatments for sexual function in cancer survivors and some of the clinical guidelines around how to approach this in your own practice.

So discussions about sexual function and cancer survivors were really pioneered by Barbara Andersen who is at Ohio State University and is actually the PI behind the work that we just heard about related to immune function in breast cancer survivors. But Barbara Andersen has really been a pioneer in the sexual function of cancer survivorship space and she's done a lot of work where she's
SEXUAL FUNCTIONS IN CANCER SURVIVORS: COMMON CONCERNS AND EVIDENCE BASED TREATMENTS, ELLEN BECKJORD, PhD, MPH

compared breast and gynecological cancer survivors to healthy controls, and that work back in the mid-80s showed that survivors had lower incidence of sexual behavior, more problems with sexual arousal and at that time Dr. Andersen concluded that identification of sexual problems should be part of routine cancer survivorship care, and the work that she had done that laid the necessary framework to develop interventions to help survivors. But more than two decades later now we haven't seen a lot of change in practice, so sexual assessment and counseling are still not routinely provided in the oncology setting and in a relatively recent metaanalysis of interventions to help improve sexual function for cancer survivors there were only a handful of randomized controlled trials. And the ones that had been conducted were not of great quality.

So there has also been calls from the Institute of Medicine in their 2008 report on Integrating Psychosocial Care into Cancer Treatment to make sure that sexual function is addressed as part of psychosocial care as part of medical care generally for cancer survivors. But they did note that attention to psychosocial health needs including sexual function remains the exception rather than the rule in oncology practice today.

So why is this? Why is there this gap if we've known that survivors encounter sexual problems as a result of cancer and its treatment why are there big gaps with respect to how often we intervene to fix these problems? And I think that there is a couple of reasons. One is that you know when the war on cancer was declared back in 1971 the big push initially was on a lot of medical research and sort of survivorship research and research on psychosocial health needs was kind of delayed by about a decade. And that was in part because until people were living for longer after diagnosis
there weren't a lot of folks to focus that kind of research on. But now of course many survivors, most will live for years past their time of diagnosis and we have a lot of work that's been done on quality of life for cancer survivors but even within that literature work focused specifically on sexual health is still relatively marginalized. And that may in part be a function of the degree to which survivors may be hesitant to bring up sexual concerns with their providers and providers may also be hesitant to bring up sexual concerns as well. And I know in my own practice I've had a lot of survivors talk about their sexual function as you know something that maybe is even too much to hope for, right. I'm glad that I'm alive, I should just be grateful that I'm still here. Expecting to also have a healthy and enjoyable sex life is sort of too much to hope for after everything I've been through. And I think most of us here would argue that it shouldn't be too much to hope for and that we should help survivors feel like they have the sort of sexual life that they desire and that they want to have.

There are lots of reasons that sexual disruption occurs for cancer survivors. And almost every aspect of the cancer journey can disrupt sexual function including diagnosis, surgery, radiation, chemotherapy, hormonal therapy and the etiology of sexual disruption is really multifaceted, so there are physical reasons, psychological reasons, biological reasons and interpersonal reasons that cancer can negatively impact sexual function. As far as some of the biological and physical causes of sexual disruption when there are direct effects on sexual organs as a function of cancer therapy including surgery or radiation that can significantly disrupt sexual function. There can be direct effects on hormonal response that can have - that can lead to sexual problems. Changes in physical appearance as a result of surgery or treatment can disrupt sexual function and then just the side
effects that are really common among cancer survivors as they undergo treatment, pain, fatigue, nausea, none of these side effects are really compatible with healthy and sort of robust sex life.

There are also psychological reasons that underlie sexual disruption in cancer survivors, so disruptions in mood, decreased sexual confidence that can be related to changes in appearance or changes in energy level, and then there is a lot that happens interpersonally. So often the survivor is very concerned about their partner's reaction to physical changes, or other types of changes, emotional changes that maybe have come about as a result of cancer and its treatment that can undermine healthy sexual function. And then the partner's reaction to changes in the cancer survivor can be challenging in maintaining a healthy sex life as well.

If we think about the nature of sexual disruption and consider some of the big parts of the sexual response cycle really at any point in the cycle there can be disruption for cancer survivors. So we know that desire can be disrupted and a lot of times sexual desire is disrupted because of these physical side effects associated with treatment or late effects of treatment like fatigue, nausea, anxiety, depressed mood. There can be disruptions in arousal. For men this can erectile disfunction, for women it often takes the form of vaginal dryness and difficult with vaginal lubrication, and disruptions in response. And this can be a function of diminished sensation, reduced occurrence of orgasm, so across the whole sexual response cycle there can be disruption at any point.

If we think about who is at greatest risk for sexual disruption and I'm going to present some sort of general statistics now in the hopes of conveying some information about kind of - and you are
thinking about the patients in your practice who might be at greatest risk for experiencing sexual problems. Patients whose sexual organs are directly affected by surgery and/or radiation are at high risk for sexual problems. Patients treated with chemotherapy during and after treatment are at higher risk for sexual disruption, and women who experience premature menopause due to surgical treatment or due to chemotherapy are at particularly high risk for sexual disruption. And for that third group, for the women who experience premature menopause a lot of that disruption happens as a result of the abrupt changes in hormonal - in hormonal response and big changes in terms of kind of not having menopause happen gradually but have it happen very abruptly can be very disrupting in the context of sexual function.

How prevalent is sexual disruption? Again you know definitely varies by type of cancer and type of treatment received. In general the prevalence of sexual problems is higher among cancer survivors compared to age match controls who don't have a history of cancer; but you'll see in across some of the data that I'll show you today this idea of a significant minority, about 20 to 45%, you see this kind of cluster group come up again and again of cancer survivors experience sexual dysfunction. So it's not the majority but it's sort of the significant sizable minority of survivors who at any point in time may be struggling with sexual problems.

The disruption in sexual function tends to be enduring rather than transitory and sometimes that's a function of the fact that someone may in the midst of chemotherapy halt sexual activity and then restarting it is not necessarily an easy thing to do and a year later you know a survivor will say I haven't been sexually active with my partner in over a year. And so it's not so much that the
problems, the physical, psychological or biological issues that may underlie the disruption are enduring but because sexual activity is a behavioral thing when we stop a behavior and sort of get out of a behavioral routine it can be hard to restart it. And this is often very true in the context of cancer survivorship. So the problems tend to stick around for a while, won't go away on their own without intervention. And addressing sexual concerns among cancer survivors should be a part of comprehensive routine cancer care. At the end of the talk I'll kind of put this in a primary, secondary and tertiary prevention context for you.

We can see some data that suggests that this kind of idea of how prevalent sexual concerns are for cancer survivors these are data on the most common information needs among post-treatment cancer survivors of a number of different cancer types and concerns - excuse me, information needs related to sexual function and fertility were expressed by about 31% of the sample. And I should say just kind of as a side comment I'm going to focus pretty exclusively on sexual function and not on fertility, that's a hugely important topic particularly for our adolescent and young adult cancer survivors but not exclusively for that group, it's just outside the scope of what I'm going to talk about today but I'd be happy to answer questions about it if anyone has any at the end of the talk.

So information needs related to sex and fertility expressed by about a third of post-treatment cancer survivors. If we look at an even larger sample of post-treatment cancer survivors these are data collected by the Lance Armstrong Foundation, again about you know roughly 3,000 post-treatment cancer survivors of lots of different cancer types, the third most common physical concern expressed by this group was sexual disfunction, expressed by about 45%. If we look at two different surveys
from the Lance Armstrong Foundation again the prevalence of sexual dysfunction reported by these groups is just under half, between you know 40 and 50%; but when we look at what percentage of people who had sexual concerns said that they got care for those concerns it's about 28%. And when we look at the folks that's almost you know kind of just over a quarter of folks who got care about 40% of them said that care came from their primary care provider and about 30% said that they got the care for sexual dysfunction from their oncologist, with the remaining percentage getting the care from a different source. So the problems are prevalent, the receipt of care is relatively low.

I'd like to show you data now from a couple of studies that I've been a part of where we looked at sexual outcomes for women with newly diagnosed breast cancer and where we looked at sexual outcomes for survivors of non-Hodgkin's lymphoma.

So in the first study of breast cancer survivors we were focused on this construct of sexual quality of life, and that's something that we measured using the cancer rehabilitation evaluation system. So we had almost 200 newly diagnosed breast cancer survivors and sexual quality of life was operationalized with a 3 item measure that asked about feelings of sexual attractiveness, participation in sexual activity and interest in sexual activity. And we looked at sexual quality of life in the context of the survivor's age, their stage of disease, whether they had received chemotherapy, if they'd had a partial or total mastectomy, their physical quality of life which was generally how they were doing physically, and symptoms of depression.
So this was the focus on newly diagnosed patients and we were able to actually measure symptoms of depression near time of diagnosis before treatment began and then look at how that predicted sexual quality of life during treatment, and we were also specifically interested in looking at whether in particular feelings of sexual attractiveness differed as a function of chemotherapy and type of surgery. There had been a previous study to the one that we conducted showing that feelings of sexual attractiveness were lower among women who'd received a total mastectomy compared to women who had only received a partial mastectomy; but when a woman received chemotherapy with a partial mastectomy she had difficult with feelings of attractiveness on par with women who had received a total mastectomy. And we wanted to see if we could detect that relationship in this sample as well, particularly because the previous study had been done with African-American cancer survivors and this was a largely white sample.

So we wanted to look at how common sexual quality of life was disrupted and when there was newly diagnosed breast cancer, and we wanted to look at the medical demographic and emotional correlates of sexual quality of life; and in particular whether emotional disruption near time of diagnosis was actually predictive of poor sexual quality of life during treatment and to look at this interaction between chemotherapy and type of surgery for feelings of sexual attractiveness.

This sample was drawn from a larger study where we were actually looking at the helpfulness of two different types of support groups for women with breast cancer and again we had 191 women with newly diagnosed stage 0 to 3 breast cancer. We measured depression about 8 weeks after diagnosis and sexual quality of life about 15 weeks after diagnosis. They were a relatively young sample,
primarily white, this was the study that I did during my graduate work in Vermont. Most were married or partnered, these are some data on the types of cancer that they had. About 3/4 of the sample had had a partial mastectomy and about 1/4 had had a total mastectomy and that surgery occurred about 12 weeks before we assessed sexual quality of life. And just under half received chemotherapy, which on average started at about 9 weeks before we assessed sexual quality of life.

Again we used the CARES which is a cancer specific quality of life measure, it can measure quality of life across a number of domains. In this study we focused on the 3 item subscale of sexual quality of life and the 10 item subscale on physical quality of life. And for this measure higher scores actually mean worse quality of life. And we measured symptoms of depression with the Beck Depression Inventory.

We used multivariate linear regressions, a model sexual quality of life in the context of these other variables that we wanted to take a look at. And these were our results. So again higher scores on the CARES indicate worse quality of life, and to our surprise frankly sexual quality of life was the most disrupted dimension of quality of life among these women, more disruptive than their psychosocial quality of life, their emotional wellbeing, their physical quality of life, their marital quality of life or their medical quality of life which was how competent they felt in making decisions with their doctors. So it was the most significantly disrupted dimension of quality of life. 60% said that their sexual quality of life was at least a little bit disrupted, about a third said it was a fair amount disrupted or more; and their symptoms of depression were in the mild range near time of diagnosis.
Their age, their stage of disease and their type of surgery were not associated with sexual quality of life, but we did see that women who had more physical problems, whose physical quality of life was more disrupted they reported worse sexual quality of life, women who had received chemotherapy reported worse sexual quality of life and women who had higher symptoms of depression near the time of diagnosis had worse sexual quality of life during treatment.

When we looked at sexual attractiveness specifically we saw that poorer physical quality of life and symptoms of depression again as with quality of life overall were associated with worse feelings of sexual attractiveness during treatment and we did see this interaction between chemotherapy and type of surgery that we hypothesized. Again where higher scores mean worse feelings of sexual attractiveness you can see that for the women who received a total mastectomy and overall that group independent of whether they got chemotherapy or not had worse feelings of sexual attractiveness and the women who received a partial mastectomy with chemotherapy looked just like that group. So the group that was doing best in terms of not feeling too disrupted related to their feelings of attractiveness were the women who didn't receive chemotherapy and received a partial mastectomy.

So our summary from this study was that sexual concerns were fairly common among women with newly diagnosed breast cancer and also that sexual quality of life is this multidimensional construct, those relationships between type of surgery and treatment with feelings of sexual attractiveness weren't there for the other dimensions, the other items within the sexual quality of life construct. WE also thought that it was interesting to see that feelings of depressed - depressed symptoms,
symptoms of depression near time of diagnosis predicted worse sexual quality of life during treatment, another reason to think about addressing emotional concerns near time of diagnosis to hopefully as a way to possibly prevent disruptions in other areas like sexual quality of life later on and just more evidence that affective and sexual outcomes are pretty intimately linked. And thinking about again women who received a mastectomy or women who received a lumpectomy with chemotherapy were a particularly high risk for disruptions and feeling, feelings of attractiveness.

Switching gears now to look at some data from a large sample of non-Hodgkin's lymphoma survivors. So these data come from a study that was actually commissioned by the National Cancer Institute or conducted out of the National Cancer Institute where I spent some time as a post-doctoral fellow and these were survivors of non-Hodgkin's lymphoma about 300 who were recruited from the LA County Cancer Surveillance Program, that SEER site. And here when we were thinking about sexual wellbeing we were looking at items related to the degree to which people felt satisfied with their sex life, whether they were participating in sexual activity and their own subjective rating of their sexual function.

Sexual outcomes are relatively unexplored among NHL survivors, you know there is the largest literature on sexual function and cancer survivors is pretty much around breast cancer survivors, gynecologic cancer survivors and to some extent prostate cancer survivors so there isn't a whole lot on NHL survivors, even though it's the 5th most incident cancer in the U.S. and survival rates are favorable, but there are aggressive treatment regimens for this cancer that have a high probability of negatively impacting sexual wellbeing.
And the other thing that we were interested in this population is that it was going to let us investigate sexual outcomes among men and women of the same cancer types, so sort of dual gender cancer to look at whether disruption is comparable across genders or whether the things that are associated with disruption are the same for men and for women.

We wanted to look at the prevalence of sexual problems among NHL survivors who were 2 to 5 years post diagnosis, we wanted to know about the medical sociodemographic and psychosocial correlates of survivor sexual wellbeing and look at whether those correlates were consistent in men and in women. So we asked about sexual activity, do you engage in any form of sexual activity? Satisfaction with their sex life, which asked - was a 3 item scale about general satisfaction, if they were satisfied with the frequency of their sexual activity, how big a problem they'd rate their sex life to be and then 3 questions about sexual function, how often they had problems with desire, arousal or orgasm.

We used the SF-36 to get information about their physical health and their mental health and in the SF-36 you can get this physical component summary score and a mental component summary score and there are normative data on the general population, so scores of 50 or higher represent at or above average function compared to the general population. And the other variables that we looked at were some sociodemographic factors and some cancer related factors, like their time since diagnosis, their treatment history, whether they'd had a recurrence and for women their menopausal status. We used regression again to look at sort of the unique variants accounted for by these
different variables in these three different sexual outcomes and we stratified all of our models by
gender so that we could look at whether the relationships detected in the regression models were the
same for women and for men.

This is our sample, just under 60 years old on average, about 3 1/2 years post diagnosis, about 71%
white, 72% married, relatively even distribution of education, about half had only received
chemotherapy but the other half had received chemotherapy plus another treatment. About 14% had
had a recurrence, and when we looked at survivors' sort of mental component summary scale about
41% were below sort of normative average and for physical function just over half were below
average physical function. And for the women 82% were postmenopausal.

Almost 70% of the sample said that they had participated in sexual activity and I think that was in
the past month. When we looked at satisfaction with sex life again I'll just kind of remind you that
this sort of idea of a significant minority, so you'll see how satisfied were you with your sex life,
about 25% saying not at all satisfied. How satisfied were you with the frequency of sexual activity,
about 23% not at all satisfied. And how big a problem is your sexual function, about 26% saying it's
a moderate or a really big problem. So again kind of in this 20 to 40% range of people who are
really struggling with the rest of the sample doing a little bit better. Similar distribution of numbers
when we look at sexual function, 29% usually or always having a problem with lack of sexual
desire; 26% usually or always having a problem with lack of sexual arousal; and 24% usually or
always having difficulty reaching orgasm.
So when we looked at what was associated with being more likely to say yes I'm participating in sexual activity. Younger survivors were more likely to say they were sexually active, survivors who were married or partnered were more likely and survivors who were doing better physically were more likely to say that they had participated in sexual activity. And for men only, men who were closer to their time of diagnosis had higher odds of participating in sexual activity, but time since diagnosis wasn't associated with participation for women.

When we look at satisfaction only at or above average - the only at or above average sort of mental or emotional functioning was associated with better reported satisfaction for men and for women. And for men only younger age was associated with better reported satisfaction.

And finally when we look at function again at or above average emotional or mental functioning was marginally associated with better function for men as was younger age, and at or above physical function, at or above average physical function and being further from time of diagnosis was associated with better function for women.

So we did see again sexual wellbeing disrupted among the sort of significant minority of non-Hodgkin's lymphoma survivors. For men and women we saw evidence that impaired physical function may be a barrier to participating in sexual activity but disruptions in mental or emotional functioning were more strongly associated with more negative ratings of the experience of sexual function, so worse ratings of satisfaction with the sex life. And for women intervention may be needed earlier in the survivorship trajectory as compared to men because women who were further
from their time of diagnosis were reporting better sexual function and so they may be struggling more early on.

Now I'm going to transition to talk about some of the evidence based interventions that are available to help cancer survivors either transition back into or maintain healthy sexual function. And the three general categories of evidence based interventions are pharmacological interventions, physical interventions and psychological interventions. There are a number of pharmacological interventions that can be helpful to cancer survivors who are experiencing sexual disruption. For men there are phosphodiesterases types 5 inhibitors, prostaglandin E1 intercaveous injections and for women estrogen if it's a safe agent to use, testosterone and topical estrogen can be helpful to overcome some of the physical issues that can be related to vaginal dryness or pain during intercourse.

Physical interventions for me, vacuum constriction devices can be helpful in achieving and maintaining erections, for women vaginal lubricators can be very helpful, vaginal dilators if there is a change in the depth or width of the vagina as a result of surgery or radiation and clitoral stimulation devices. When I give this talk to survivors I tell them that you can actually buy a vibrator now at Giant Eagle. A lot of people don't know that. And when I say that at least one person is always like it was nice hearing this talk, I have somewhere I have to be you know. And then they - so those are pretty widely available now and can be very helpful for women. There is also a lot of psychosocial or psychological interventions that can be useful.
Psychoeducation, so this is a problem that suffers from a lot of silence, you know it can - it's something again that I think this is probably not going to come as a surprise to anybody, survivors are often really hesitant to bring up sexual problems that they are experiencing, and I think any time we sort of keep something quiet it's isolating. Survivors are often surprised to know that other people in their position are experiencing sexual problems or that there is anything that can be done about it. So just providing some psychoeducation around the nature of sexual disruption and what can be done to help can go a long way. Because our emotions and sexual function are so intimately tied together even addressing stress management to stress reduction can have an indirect affect on improving sexual function for cancer survivors, the same with relaxation and guided imagery.

Sensate focus exercises can be particularly helpful for people who are experiencing sexual disruption as a result of decreased or loss of sensation in different areas of the body. And this work can be individual or couples based. I have done usually in the context of sexual function - addressing sexual function in my own practice it often starts as something I talk about with a survivor one on one and then if it seems like it would make sense and be helpful we may bring the partner in to a session down the road to kind of have a discussion among the three of us. But one thing that I often tell survivors and this goes for reengaging in sexual activity particularly if there has been a complete halt in sexual activity, which isn't that unusual you know, getting diagnosed with cancer is just not that sexy and when it happens there is often even for people who have a healthy and robust sex life until that diagnosis there can - you know sex can come to a complete and screeching halt. And once that happens it is very hard to reestablish a regular sexual routine.
And I'll often tell survivors you know if that's gone on for a long time and they are sort of thinking about this person maybe they've been in a relationship with for over 3 decades and confused about why as they think about reengaging in sexual activity they feel so nervous, they feel so uncomfortable, they feel so unsure of themselves so think about 30 years ago before your first sexual experience with this person, you know you are kind of looking at something similar to that again. When a break like that happens it really changes the context of the relationship. So I tell people whether it's restarting sexual activity or talking about it with their partner do a little bit a lot of the time. You know you don't have to jump right back into full-fledged sexual intercourse and you don't have to like make dinner and sit your partner down and say it's time for us to talk about our sex life and how we haven't had sex in over a year, you know also usually not sexy. You know it can be good to just talk about it a little bit a lot of the time, you know be a little bit affectionate a lot of the time can work back up to it. Again particularly when there has been a real halt in sexual activity but even when people are in the throes of treatment and not feeling like they want to be sexually active it can also be helpful to do a little bit a lot of the time. There are lots of ways to enjoy your partner and to be affectionate and sexual with them in ways that can be done even when people don't feel like engaging in regular sexual intercourse. So a little bit a lot of the time seems to be a good rule of thumb for activity and for communication.

Oftentimes a multidisciplinary approach is needed, you know whether any of the strategies that I just talked about probably are not best used in isolation, right. So we usually want to kind of come at sexual issues from a multidisciplinary approach and use pharmacological, physical and psychological interventions together. There is evidence that counseling with physical intervention
improves outcomes and I'll also say that sometimes the interventions that these folks need are very practical. So for example one thing that I've done clinically is in the course of discussions with a survivor who one of the big barriers to reengaging in sexual activity was concern about the way her reconstructed breasts look, so we had a really practical conversation about well are the you know ways that you don't have to show your breasts to still be sexually active. You know could you think about buying a bra or lingerie that you might be able to leave on during sexual activity? And she said well how can I go into you know Victoria Secret and ask for that? And I said you think you are going to be the first person who ever walked into Victoria Secret and like talked about this problem? And she really felt like she might be. And so I said well what if I call them up and say look somebody is coming into your store and this is kind of the situation that she's in, can you make sure that somebody who is going to be sensitive to this and can be lined up to - and of course they were you know so accommodating and so helpful. She went, she met with someone, made some purchases and it was really helpful in getting things on the right track. We didn't have to unlock some deep-seated psychological issue to get her back on the right track, we just kind of had to you know get her to - get her credit card out and make a purchase. And sometimes that's all it takes, right. So some - I think a lot of different strategies to take.

The other thing that's worth mentioning though that I think can be sort of more psychological in nature is that it is sometimes the case that a survivor kind of gets diagnosed with cancer and prior to that had a healthy, robust sex life with a partner in a healthy emotional relationship but oftentimes that's also not the case. I've worked with lots of survivors who had a history of sexual trauma and for various reasons that trauma is almost always triggered by the experience of cancer and its
treatment, the lack of control that people have when they are diagnosed with cancer, the degree to which their body is invaded by surgery and treatments this can often be very triggering for people with a history of sexual trauma and that can really be disrupting in terms of their sexual function even if they've been doing relatively well before cancer. And also you know I think in any context sexually, emotionally, psychologically cancer has a way of making little problems bigger. So if there were communication problems in a relationship or if there were some you know sexual difficulties in a relationship those things often are not helped at all by cancer, and sometimes they are made much worse. And so you'll see in a minute that doing a sexual history review is also really important to figuring out the best way to move forward with treating sexual problems once they have occurred.

So this is sort of the cancer control continuum as we commonly think about it you know primary prevention, smoking cessation, let's prevent cancer from ever happening, secondary prevention, let's catch it early with a mammogram. But if we don't do that we diagnose, we treat and for some people end of life care becomes important. And we think about cancer survivorship as being kind of the latter half of this continuum, but because cancer survivors for the most part are living so long after their time since diagnosis, you know primary, secondary and tertiary prevention become important for this group of almost 14 million in the United States today. But I think that it's helpful to think about primary, secondary and tertiary prevention in the context of sexual function for cancer survivors as well. So if we can prevent the occurrence of sexual problems for cancer survivors this requires doing things upfront before treatment begins. Fertility preservation is something that has to happen before treatment begins for the most part, particularly for women. Providing
psychoeducation, helping to reduce distress near time of diagnosis, doing treatment planning, making sure that as survivors if they are able to make decisions about what kind of treatment they can get, if there is space in there for choice to be made with the provider, thinking about the impact of what the treatment might have on sexual function can be a piece of information that a survivor can use as they make choices. This comes up a lot obviously in the context of prostate cancer.

Secondary prevention, doing surveillance for sexual problems, I'll talk specifically about that in a minute. But early detection of sexual problems so that maybe there is a one or two month halt in sexual activity and not a 12 month halt in sexual activity because that's a much higher mountain to climb and get over than when there has been a shorter amount of time that problems have gone on, not letting those problems happen for long before they are addressed. And then when we have to treat sexual problems using this multidisciplinary approach of pharmacological, physical and psychological treatments.

The National Comprehensive Cancer Network offers some guidelines on how to address sexual function in cancer survivorship. there are 4 primary steps: ask about sexual function at each appointment, review past sexual history and current concerns, discuss treatment related infertility and treatment options and use a brief sexual symptom checklist as a screening tool. Remember also some guidelines associated with lab tests, hemoglobin A1C, testosterone, creatinine and cholesterol tests can be done. 'And this is what the Sexual Health Inventory for Men looks like, it's a short 5 item scale that primarily focuses on erectile function but also questions about satisfaction with sex life. For women a physical exam is an important thing to do to identify points of tenderness, to
investigate vaginal atrophy and anatomical changes that may then lead you down a road of wanting to make sure that lubricants or topical estrogen or vaginal dilators become part of the treatment plan. And the brief Sexual Symptom Checklist for Women again a 4 item scale, actually more than 4 items because it's got all these sub items, but a relatively short scale that can be completed pretty quickly that asks about problems with desire, arousal and orgasm.

So as far as future directions go in the study of sexual function for cancer survivors and you know I think the literature really has come a long way. This is certainly something that we talk about more than we did 20 years ago when Barbara Andersen sort of started her crusade and has been joined by many others. There has been a lot of improvements around the assessment of sexual problems, so those brief screeners are available now. If you are familiar with the PROMIS Project, the Patient Reported Outcomes Measurement Information System, there is a whole set of PROMIS measures that are devoted to kind of a comprehensive and a multifaceted assessment of sexual function. We are strengthening the intervention evidence base and there is again this emphasis on multidisciplinary approaches to kind of come at sexual problems from pharmacological, physical and psychological ways. And we do see continued integration of addressing sexual concerns in your routine survivorship care. And part of that is by making sure that sexual issues become a component of survivorship care plans so that we can make sure that that conversation happens in the context of survivorship care and can continue to be revisited as time goes on.

If any of you have, and I'm sure many of you have, talked with a patient about their sexual function I would say that almost you know without fail people are so relieved to be asked. You know and even
if they are not having a problem I think that it's something that they are very relieved to be asked
about and grateful to have the space to talk about. So it's something that I think survivors really
appreciate because if you've gone through everything you've gone through to survive your cancer
you know sex is a very life affirming sort of vital part of our experience of the world and it is an
important part of quality of life at any age and for survivors who are, who are not currently partnered
and survivors of course deserve to have as rich and full experience of the world as possible. And so
asking about sex and addressing sexual concerns is really important for this population.

Okay, so again I think you answer these questions again.

What steps should be completed at every encounter to assess sexual function? All right, excellent.

Ask about sexual function, review sexual history, discuss treatment options and screen for sexual
problems? All of the above.

How common are sexual problems in cancer survivors? Excellent. It does vary by type of cancer
and time since diagnosis but we do often see this sort of significant minority of 25 to 45% of
survivors reporting problems with sexual function.

And finally, what are the 3 main treatment strategies for sexual problems in cancer survivors? All of
the above, those are the 3 main strategies and what's more it's often helpful to use all 3 of them
together in a multidisciplinary approach.
Okay, thank you very much.