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**JAN**

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 >> BETH LOY: Hello everyone welcome to the Job Accommodation Network's audio and Web Training Series I'm Beth Loy and I'll be the moderator for today's program called "Wearable Round-Up! Wearables as Assistive Technology for Workplace Accommodations". This will be featuring Teresa Goddard Lead Consultant for the Sensory Team and Brittany Lambert consultant on the same team but before we start the program I want to go over just a few housekeeping items.

 First if you have experiencing technical difficulties during the webcast call us at 800en 526-7234 for voice or for TTY call 877-781-9403 second we plan to answer as many of your questions as we can during the presentation so please send in your questions at any time during the webcast these can go to our email account question@askJAN.org or you can use our question and answer pod located at the bottom of your screen.

 To use the pod just type your question and then submit it to the question queue.

 Also at the bottom of your screen you'll also a FileShare pod that you can use if you have difficulty viewing the slides or would like to download them.

 And finally, I want to remind you that at the end of the webcast, an evaluation form will automatically pop up on your screen in another window. If you don't have your popups blocked.

 We really appreciate your feedback so please stay logged onto fill out the evaluation form.

 We'll also send this form to you after the webcast when we send you a link to the recording. So I've been looking forward to this webcast. Pretty timely. And Teresa and Brittany have put a lot of work into it so let's go ahead and start today's program. Brittany.

 >> BRITTANY LAMBERT: Thanks Beth hi everyone and welcome to today's presentation. In this presentation we'll tell you all about wearables, what they are, what they can do, and how they may be beneficial parts of an Accommodation Plan.

 I want to briefly go over today's topics. We're going to explore wearable devices and how they may apply as workplace accommodation solutions. We're also going to review several situations in which wearables may be used to address common workplace limitations such as time management, medical management, stress management, information access, and communication.

 We'll also spend a bit of time reviewing accommodation trends and take a look at wearables in development. We hope to address any questions that you may have on these topics, as well.

 So what exactly is a wearable? Is it anything that can be worn or attached to the body? Let's explore this idea.

 A wearable device is defined as a monitoring modality that is worn by a user in daily life. It's usually integrated into items used daily like watches, eyeglasses, rings, vests, gloves, belts, shirts, brassiers, shoes, necklace and barrette as an inseparable component. An individual customized size is usually required. It often moves with the user ubiquitously without any apparent or obtrusive parts.

 In addition to devices defined as wearables we're also going to look at a few products that could be described as attachables. So what's the difference?

 An attachable device is defined as a monitoring modality that should be attached on to the body non-invasively or can be touched occasionally by a user intentionally. It is not a necessary item but has an unnoticeable impact on daily life such as a tattoo, pad, pedometer, mobile phone, tablet, and other portable devices. It's usually one-size-fits-all.

 While these distinctions do exist, for the purpose of this webcast, we'll be using the term wearable as an umbrella term for both wearables and attachables anything that can be worn or attached to the body is fair game.

 Research suggests that the market for wearables is continually -- wearables is continually growing. 56.7 million adults are predicted to use a wearable device at least once a month in the year 2019. An additional 3.8 million children and teens will have such a device.

 Over 500 million wearable users were connected to a 4G network in 2017, while the market is expected to grow by 89 million by 2022, connecting over 9 million.

 With the steady increase in wearable usage it's becoming more and more common for users to rely on their devices for things like symptom and medical management this means employers may be seeing more wearables in the workplace which may necessitate a conversation about reasonable accommodation.

 Wearables aren't just for leisure. They can be powerful pieces of assistive technology with practical uses in the workplace as well as home. Employees with disabilities may find the use of wearables instrumental in addressing the following needs, productivity management; medical management; stress and symptom management; information access; and communication.

 >> TERESA GODDARD: So next I would like to talk about Smartwatches, one of the more common wearable devices that we hear about here at JAN the best thing about the SmartWatch is also the worst thing there are so many things it can do both work related, health related and also for pleasure and relaxation.

 So what we find with Smartwatches in the workplace is that while they provide convenient access to lots and lots of apps including some that can be very useful at work useful for monitoring our health, they can be also be used as a distraction. We're going to get into that in the coming slides talking a little bit about how sometimes a SmartWatch might be the best solution for someone. And sometimes you might want something else that let's them handle their issue in a different way.

 So on this slide we have some of the more common Smartwatches, the Apple Watch which a lot of us are familiar with, Android Wear and Samsung Gear are other popular brands but especially for those who use the Android phones there are so many different options for Smartwatches and you could really be looking at a watch and not realize it's a SmartWatch, wouldn't you agree.

 >> BETH LOY: I would.

 >> BRITTANY LAMBERT: Absolutely.

 >> TERESA GODDARD: Yeah so like the Apple Watch is kind of iconic you're looking at a SmartWatch when you look at it but some of the others might be less obvious in the workplace which could be a good or bad thing depending on your perspective.

 So what we find is if somebody wants to use an app that works with the SmartWatch or use reminders on a SmartWatch itself as an accommodation, it's critical that they plan to use it in a way that makes it a help, not a distraction. So one thing that can be very helpful is if you modify the notifications that are coming to the watch. For some watches, however, they kind of mirror how you have your notifications set up on your phone so if you could go to the next slide, Beth, I want to talk about the Dot for a second. The Dot is a specialized type of SmartWatch specifically for Braille users. And if you're tuning in and looking at the picture, you can see small dots and if you look very closely, you can see that some of them are raised and some are recessed.

 So this is actually a teeny teeny tiny Braille display on a watch that pairs with a phone. So that you can get not only your time and date like you might with many types of Braille watches but also notifications, texts and so on. And you read them just as you would any other Braille display. But of course it's very small.

 And that's one complaint that we have heard from people who have trialed this is that there's so little Braille space there, it's hard to get a lot of usable info quickly.

 Now, the positive feedback that we've gotten about it is that it is so discrete. A lot of people who are blind or have low vision who are using for instance the Apple Watch are using that more or less in like a soundfield mode so people who are nearby might be able to hear what the watch is saying. For some people, they like that. They like that audible input but for people who either prefer Braille input or need Braille input due to a hearing impairment or who just want more privacy, the Dot might be the way to go.

 So right now it's recently had a price drop when we checked this when we turned in our presentation the current price was 399 but as of today you can get it for 328 on Amazon.

 >> BETH LOY: That's great.

 >> TERESA GODDARD: So it's really an amazing price for what you get.

 >> BETH LOY: Yeah.

 >> TERESA GODDARD: Being it's a customized Braille product. I don't know if you have ever looked Beth into regular Braille watches but just a regular Braille watch is a lot more expensive than something you would buy off the shelf at your department store.

 >> BETH LOY: I think some of the Smartwatches are around $300 too.

 >> TERESA GODDARD: This is competitive in price to other Smartwatches yes so it's an exciting product we hope we'll get more feedback about it but it just depends on the user.

 We have talked to people who actually use both in different situations.

 >> BETH LOY: Okay.

 >> TERESA GODDARD: All right so I want to talk a little bit about -- wait this is Brittany's slide, Brittany you stole my favorite example.

(Chuckles).

 >> BRITTANY LAMBERT: Now we're going to take a look at solutions for productivity management. Let's start with a practical example. A surgeon with Attention Deficit Disorder was having difficulty getting to the operating suite on time.

 In the past, a JAN consultant suggested providing a Timex Datalink Watch programmed reminders of the employee's surgery times and other appointments a newer approach with alerts delivered through SmartPhones and Smartwatches. The employee could also have alerts delivered through a WatchMinder watch.

 Watches with alerts can be valuable assets to employees who have difficulty managing time. Let's look at a couple of examples.

 First, we have the WatchMinder. The WatchMinder is a sports watch with a rechargeable battery that provides messages to the wearer, reminding them of important tasks. You can choose from up to 65 preprogrammed messaging or create your own customized memo.

 The device also allows the wearer to utilize up to 30 alarms per day.

 The WatchMinder also has training and reminder modes as well as a vibrating alert with a snooze repeat feature.

 And the current price of the WatchMinder III is 69 U.S. dollars.

 Now, let's take a look at the Time Timer watch. Time Timer products allow the user to see how much time has elapsed by using a color blocking system this visual representation can help employees stay on track by making it easier to understand how much time has passed and how much is less for a particular task.

 This can be very useful for those who need to block off chunks of time to work on specific tasks or products.

 Next let's take a look at fitness trackers. These devices have become incredibly popular to assist those who want to keep track of their physical activity but they can also be utilized to managing productivity. Trackers with alerting devices can be used to set reminders for important tasks.

 Here are -- tasks.

 Here are a few examples. The Fitbit Iconic allows users to track physical activity breathing and heart rate in addition to these standard features the watch can also connect with a SmartPhone to provide calendar reminders and push notifications from the wearer's apps. This can allow users to have a hands-free access to important reminders.

 The Fitbit Iconic currently retails for $249.95. Which can be quite an investment if you're not sure how well a fitness tracker will work to meet your needs.

 If you want to test out the idea of a fitness tracker or just are just looking for a cheaper alternative the Teslasz fitness tracker has many of the same features as the Fitbit Iconic for about $30. This option may also be beneficial for employees who work in rough environments where expensive equipment can be easily damaged.

 >> TERESA GODDARD: No joke I've seen it run over by a car and continue to work.

(Chuckles).

 >> BETH LOY: Teresa you better watch where you're going and what you did.

 >> TERESA GODDARD: Well, I didn't drop it.

(Chuckles).

 >> BETH LOY: That's impressive though.

 >> TERESA GODDARD: I was very surprised.

 >> BETH LOY: That's amazing.

 >> BRITTANY LAMBERT: Next we have the Invisible Clock II which is a wearable timer that features 12 alarms, 4 timing features, a meeting timer and a custom timer. The user can be alerted through a vibration customized for their needs. The Invisible Clock comes with a battery and a belt clip and can be purchased in nine colors. This product also comes with a one -- comes with a one year guarantee so if you're not sure the device can meet your needs, you can try it without much risk. The cost of the Invisible Clock II is $39.95.

 >> TERESA GODDARD: You know I've known people to wear it on a wrist wallet, as well.

 >> BRITTANY LAMBERT: Hmmm that could definitely work.

 >> TERESA GODDARD: If you're not using a belt. It's something that can be worn on a wrist wallet although it's kind of a tight fit.

 >> BRITTANY LAMBERT: Many employees find themselves working in an environment full of distractions. It's very common for workplaces to utilize cubical seating which can be very problematic for those who have difficulty concentrating due to a disability or medical condition. One suggestion we often make for employees in this situation is the use of noise canceling earbuds or headphones.

 So here are a few examples of such technology. First we have the QuietOn buds. These are noise canceling earbuds effective up to 40 decibels with low frequencies. They are wireless and can last 50 hours on a single charge.

 Bose also has a set of wireless earbuds that may help employees to cut out distraction their SoundSport ear butts have no cords and are designed to withstand sweat and acclimate weather they don't have noise cancellation but they work well for people who can listen to music or use a sound machine in their work environment.

 >> TERESA GODDARD: All right let's look at a case example. An accountant with narcolepsy had difficulty staying awake during the workday. He often fell asleep unexpectedly at his desk. The company had a policy about sleeping in the workplace. I think that's pretty common in most workplaces. So this opened up the employee to possible disciplinary action. Now if you do have a similar situation there's guidance an applying performance conduct standards for employees with disabilities but we're going to talk about a tech related solution.

 One thing to keep in mind in situations like these, an employer can still hold an employee with a disability to the same performance and conduct standards as other employees but they may need to provide reasonable accommodation. And help the employee meet that standard if they are struggling to do so because of a disability. You don't have to let everybody sleep all day. Although you know when I worked in Japan they had a nap room. I think we could implement that here.

(Chuckles).

 >> BETH LOY: Too noisy here.

 >> TERESA GODDARD: You're probably right about that.

 >> BRITTANY LAMBERT: We need the QuietOn.

 >> BETH LOY: Yeah.

 >> TERESA GODDARD: So in the past a very common approach was to provide a flexible start time that would allow an employee to begin their shift later if they weren't getting enough sleep at night being alert enough during the day but with narcolepsy you can't always predict when it is you'll drop off sometimes it can be stress related for instance and a little bit unpredicted.

 So a little bit of a newer approach and one we talk about in the past is providing a device called a Doze Alert. Now the Doze Alert is designed to detect head movements. The type of head movements that you would have when you are nodding off to sleep.

 Now, the good thing about the Doze Alert is also the bad thing about the Doze Alert, it's designed to detect when your head is starting to drop forward as many of us do when we are starting to fall asleep but if you fall asleep with your head tipped back or just get very quiet and still this probably is not the solution for you.

 So let's talk about a couple of other options.

 Okay. So for sleep detection there are a few options. One that we have just talked about was the Doze Alert. Runs about $50 depending on where you pick it up.

 But the Nozzer Watch is really, really interesting. It doesn't detect when you have fallen asleep but it has the ability to kind of monitor you and notice when you might be slipping into a little bit of a sleepy state and wake you up from that sleepy state and it works by increasing neural activity in the brain. By affecting the tactile nerve endings which basically means it makes you feel something when you're about to fall asleep but you can use it with gloves and other productive clothing. It kind of buzzes a little bit but not in like a painful way is how I understand it. It's pretty cool it's got a built-in clock a timer a stopwatch, alarm clock and you can charge it wirelessly and you get all of this for the low, low price of $112. It used to be 79. It's gone up a little bit.

 Now the StopSleep is a little bit different. You wear it on your fingers and it measures the conductivity in your skin. Because it turns out how conductive your skin is at any point in time can reflect what's going on in your brain and how sleepy you might be getting.

 So what they say is when you're falling asleep, you'll have a signal decrease when it comes to the conductivity of your skin. So that's what happens when you start to get drowsy.

 Now, this will alert you with a sound or a vibration when that's happening, when your skin is experiencing that change in conductivity.

 This is a little bit harder to find than it used to be but you can still get it on Amazon for $189 so really interesting newer products for detecting when somebody is beginning to fall asleep now I do want to say about these they are for sleep not for detecting a hypoglycemic episode for that you want something else they are not for detecting seizures, either but here are some things that are so in the past when we talked about the smart monitor and the Embrace and other things in this category, a lot of them have been like actual free-standing watches that you would wear. But we have seen a little bit of a shift. The Embrace Watch, which is pictured here is still like its own product that you wear on the wrist. You don't sync it with like your Apple Watch or anything like that. It's its own stand-alone thing but other things have actually morphed so you may see employees using the old watch style like smart monitor or SmartWatch but you may have somebody using the app based version so the instant SmartWatch detects abnormal movements and gives you a text or phone call alert to a designated contact so that could be a family member or caregiver and it continuously monitors the wear and detects competitive shaking motion like you might have when you are experiencing a seizure so it let's you to quickly get help and also records the time, the date, the location and the severity of what the watch detected.

 And then that data can be reviewed by a clinician. So really interesting product.

 Now The -- the Embrace is similar records physiological sensors that's why it's switched over to be a SmartWatch related app its got its own sensor technology from what I understand but you can pair it with a SmartPhone via Bluetooth. And what it really does is measures your sympathetic nervous system activity so whereas the instant SmartWatch detects more motion, this is more focused on those physiological signals that let you know what's going on with your nervous system. But it has a gyroscope so it can detect motion as well this is one of those products you pay one fee to get the product and then there's a monitoring fee that you would pay monthly. So they are on Version 2 of the Embrace Watch which runs 249 and just under 10 bucks a month for that monitoring service.

 Now, the BioLert, I went -- the BioLert I went back and forth about whether or not need to -- whether to include it but there may be current users so that's why we have it here it's hard to get new information on it we haven't had feedback on it for a while. It's just another solution for monitoring. And it's a little bit more pricey in terms of its plan. It advertises $20 a month for a basic monitoring plan.

 Now, the instant SmartWatch, they have plans that range from 50 down to 15 depending on how often you think you might need to use it.

 So price point can be very sensitive. I don't see this necessarily being something that an employer would typically buy but it might be something that a person wants to use to monitor their seizure activity wherever they are, including in the workplace. So I think this is probably usually going to be a personal use item that an employer might modify their policies to allow. What do you think Britt?

 >> BRITTANY LAMBERT: I agree it's probably going to fall more under that personal use side of things.

 >> TERESA GODDARD: Yeah, and next we want to talk about some other products that again might be used to monitor someone's health at work or the neckworn air cleaners are actually used to modify the work environment.

 So first I want to talk about Propeller Health. And this is another one of these two-part systems that involves a thing that you buy. And then an app that you can use for monitoring. We're getting a lot of calls about allergies and asthma. We're running into ragweed season now so I think we're going to get more and more calls about this. That's why we want to bring this to you today. But the Propeller Health system has a sensor that you actually attach to your inhaler. If you're a person who uses an inhaler.

 And it syncs with an app that you would use on your phone perhaps on your SmartWatch. And what that app does is it takes notes whenever you use your inhaler. So that you can have a record of what's triggering your symptoms and causing you to need to use that inhaler. They actually have different versions for asthma and for COPD which I thought was very fascinating.

 But you basically get personalized feedback on when you need to use your inhaler, which might be valuable if you need to go to your employer and say my triggers are getting more common at work and I can prove it. This is when I'm having to use my inhaler. It can also be useful for conversations with a doctor. Something else that's interesting is the ViATOM wearable oxygen monitor I'm sure a lot of you have seen things that monitor your oxygen levels in your blood they shine a light in your finger you might wear one when in the hospital but there are portable models available.

 Usually they are not too expensive maybe running between 20 and $50 but that's just for like basically an instant read. You pit it on your finger, you take the -- put it on your finger, take the reading, take it off what's interesting about the ViATOM is it's got a little ring you put your finger through it's kind of a soft ring so not too uncomfortable to wear and you can wear it for longer periods and then again it works with an app to monitor your levels so it's a little bit more expensive than a standard pulse ox unit that you might get for portability. It runs about 119.

 >> BETH LOY: Teresa what's the distance on that between the app and the person who is wearing it? Could I put that on my mom.

 >> TERESA GODDARD: You wouldn't want to have the app with you and run it on your mom I don't think because I think it runs on Bluetooth.

 >> BETH LOY: If we were in the same environment.

 >> TERESA GODDARD: If you were in the house together, yeah but it's going to come out of sync at the distance that a Bluetooth comes out of sync is my understanding but I would be happy to check it.

 >> BETH LOY: It's just like a Bluetooth connection.

 >> TERESA GODDARD: I believe so but I can look it up for you.

 >> BETH LOY: Interesting, okay.

 >> TERESA GODDARD: One thing that is nice about it and this is how people are using it say at home. Is it will give you a little bit of an alert if your O2 level drops.

 >> BETH LOY: That's what that baby sock does.

 >> TERESA GODDARD: Yes. I forget which sock you're talking about but I remember a sock that does this.

 >> BETH LOY: There's a baby sock that has an app.

 >> TERESA GODDARD: That's right. But I think you would run into the same problem that people run into with the sock which is if it falls out of sync you're going to get a panic.

 >> BETH LOY: Right.

 >> TERESA GODDARD: And you don't need that. There's a whole bunch of sensors for babies to monitor their respiration. What this does is instead of counting respiration is it actually monitors your O2 level in your blood is how I understand it.

 >> BETH LOY: I think that's what the owlette baby care.

 >> TERESA GODDARD: That's the name it's the owlette tiny little socks I wonder if you can put the socks on a thumb.

 >> BETH LOY: I'm the baby expert. That's a good question.

 >> TERESA GODDARD: There's always going to be questions with wearables in fact sometimes we question whether they are still going to be on the market by the time we get to the presentation it just comes and goes all the time.

 >> BETH LOY: Good point.

 >> TERESA GODDARD: What I'm thinking with this ViATOM I think it would be uncomfortable to wear like for more than say 10, 15 minutes at a time.

 >> BETH LOY: Okay.

 >> TERESA GODDARD: Even though it's soft and it's got a ring, it's kind of big. It looks like it might interfere with other activities but maybe when you were resting it might be really good.

 >> BETH LOY: Okay.

 >> TERESA GODDARD: So a lot of -- people use a lot of things, though, to get along at work due to their respiratory health. A lot of people are using portable oxygen maybe even portable oxygen concentrators just to maintain their health while they are at work.

 One question that we get a lot is is it safe for someone to use oxygen at work and I think it really depends on the setting and what the person is doing. I've only had a couple of calls where I really had a really strong concern about a person using oxygen. One was an inspector in an factory so I think it would make sense.

 >> BETH LOY: Mechanic.

 >> TERESA GODDARD: Electrician working with arcing electricity.

 >> BETH LOY: Yeah.

 >> TERESA GODDARD: But in most office settings there's not really a problem. People sometimes wonder well will it be a trip hazard but there's things you can do to adjust that.

 On this slide I want to talk just for a second about neckworn air cleaners because we have seen a lot on the market and you see new ones come and go every spring as we get to the beginning of pollen season. And the honest truth is we get mixed feedback on them. Some of them we get decent feedback on like the ones from the Wein company. People say those work pretty well but their battery life is terrible.

 With some of the other brands they say the battery life is good but I can't really tell if it's doing anything.

 The main thing that I feel concerned about with these is some of them do release minute amounts of ozone just as a function of how they work so I think it's really critical to get a medical professional's input to see if something is appropriate for the person or not. If somebody has asthma but ozone is a trigger for their asthma symptoms, you don't want them wearing something that emits their trigger.

 >> BRITTANY LAMBERT: I would also say for these, they are definitely best as a part of a larger Accommodation Plan. They are probably not going to be something that you want to provide as the sole accommodation. They might be helpful for a situation where someone has to go to a restroom or a common area where there might be irritants. But that might not be the only accommodation that that person needs but rather just one tool in the toolbox.

 >> TERESA GODDARD: You hit the nail on the head, Brittany, for sure, because these things aren't designed to be worn all day every day even if they work as well as the advertising says they work. They are just not designed for that. It's more like to get a person through a situation where they might have to go through a space that they are unsure of, or that maybe they are members of the public who can't be avoided in this space like someone who has to come up to a reception desk where there might be members of the public wearing perfume it's not a be-all end-all solution like you want it to be it has to be adjusted in environment and tasks I think that's true for anybody using medical management these are just pieces of the puzzle.

 >> BETH LOY: We don't really have any data, do we on whether Medicare, Medicaid or other insurances cover these devices.

 >> TERESA GODDARD: The ones on this page, no, now the cardiac monitors we're starting to see Medicaid coverage.

 >> BETH LOY: Okay.

 >> TERESA GODDARD: So we'll get to that in a little bit.

 >> BRITTANY LAMBERT: I found when I have researched some of these products it's a frequently asked question on many of their Websites. So check the individual product's Website for more information on that.

 >> TERESA GODDARD: One thing -- I understand companies don't want to share the sticker price if there's other funding available but some of these places won't even share pricing information unless you get on their mailing list first and that's not my favorite tactic. But on the other hand, a sticker price might look high. But perhaps people aren't paying the retail for that. They might get assistance.

 I want to talk a little bit about diabetes management in the workplace. And of course when it comes to diabetes, probably the most common accommodation that we talk about that we hear about, that people are requesting is a modified schedule. Something that's going to let them check their levels, check their sugar, take medication, if they need it, stop to eat if they need it. It's just an incredibly common accommodation request. But sometimes you might need something a little extra and that's what these products are about. Again, they are not a be-all end-all solution for diabetes in the workplace these are tools that people might choose to use or request.

 So ones we're getting more and more questions on is the Dexcom continuous glucose monitoring systems. So these are things that a person would wear attached to their body. Perhaps on the forearm for instance. It might not -- it -- it might not be hidden you may be able to see it they are usually connected wirelessly to a SmartPhone app or another type of a monitor. Just for people who don't have a SmartPhone there are other options but they are all almost connected wirelessly and the point is to measure your glucose levels and see if you're getting too high or too low and send you an alert. People who need these really need them they are often what we call brittle diabetics people whose blood sugar go up quickly or unpredictably and this let's them stay healthy and measure their A1C and everything they need for their doctor.

 As an alternative to testing like every 30 minutes. But we have recently just since the beginning of this year started getting questions from employers who want to ban wireless devices from the workplace, including these things that are very necessary for medical monitoring. And some employers will budge on it and some won't. But if you have someone who says they are using a Dexcom, it's for diabetes. It's to monitor glucose. It's usually very important that they have it. And while there might be alternative approaches they could use I think it's between the person and their doctor what's the best choice for them. I'll get off my soapbox now.

 The other thing I want to talk about is the Thrive glucose gel necklace this is so popular that it's actually sold out right now.

 The little blue circle is a diabetes awareness signal. And you can see the necklace is a little bit thick if you're looking at the slides. That's because it's a tube filled with glucose gel. And the idea is that you would wear this around your neck and have it available almost instantaneously if you realize you're having a hypoglycemic reaction you don't have to fool around with glucose tablets or find something to eat find a candy some people have been instructed by their doctor to squirt cake icing into their mouth this is more streamlined it's actually designed by a guy who was a skillist and needed something he could get really quickly if he realized he was having a hypoglycemic reaction while he was out enjoying his sport so it's really interesting it has kind of a funny look you might modify a dress code to allow it in the workplace I don't know if everybody is going to love the symbol or not either but it must be popular because you can't even get it right now, it's sold out.

 Siren socks. That's the last thing I want to talk about on this slide today. Siren socks are actually kind of a smart sock I never thought I would see the day but we have smart socks now. And what they do is actually monitor your feet. Which can be very important if you're a person with diabetes for signs that your circulation might not be where it needs to be or that you might have a sore that needs attention. Because as you get older you may be more susceptible to both diabetes and things that make it harder to see the bottom of your feet and this is something that would allow a person to independently be aware of that and know that they need to go and see their doctor about a foot problem.

 And like most things these days it works with an app and there's a subscription model. Now you used to be able to just buy this like go to the company's Website and order up yourself a set and a subscription but I think that they are wanting a prescription now is the information that I've got. So I think some people were buying it and not finding it suitable for them.

 >> BETH LOY: How does it signal Teresa?

 >> TERESA GODDARD: It's like everything else, it connects to the phone and just let's you know -- it uses heat sensing. To see what the health of your feet is like to let you know if you're developing a hotspot or a sore.

 >> BETH LOY: All right.

 >> TERESA GODDARD: So there are some fascinating new products coming to market for sure. There's a couple more here that I want to talk about and again some of these products are a little bit in development. So the information for instance on the iBeat has actually changed between the time we finalized the slides and the time I finalized my script for today.

 So the iBeat is now known as the 100 plus and that's because I assume they all want us to live to be 100 plus it has similarities to fall detectors that have been around a long time in that it can detect if you're having an issue and give you a way to call for help but instead of being worn around the neck it's worn on your wrist and it does cardiac monitoring to let you know if your heart is beating in an unusual way that needs attention.

 If you're looking at the slide the watch face is saying are you ok? And there's a green button for yes and a red button for no. So if there's a false positive or something, you can let the watch know that you're okay.

 Like a lot of these other things it can share information with a doctor or someone who is a trusted friend or family member when you need emergency help. But they recently changed the iBeat company is still iBeat. But the watch has been rebranded as the 100 plus.

 And this is a little different from the Cardea SOLO. The Cardea SOLO is something that might be a little less obvious. And might be suited to someone who wants to wear say a SmartWatch for another reason.

 Because it's like a sensor that you wear. And then it sends information to your doctor to let them know that you've had an arrhythmia or something that needs attention.

 So two very similar products. But worn in different ways.

 I think a lot of people want a product that will do everything. But sometimes it might make sense to go with a stand-alone, especially if you need a SmartWatch for another reason like information access.

 Cardea also has a product called the 2020 which is used to detect heart problems. But unlike the SOLO it's not necessarily that needs to be for just one person. I've seen them market it for things like sports teams so that somebody is having an issue perhaps has collapsed at a sports practice, it can be used right away.

 Whereas the iBeat 100 plus watch and the Cardea SOLO are designed for single user.

 Now like I was saying the Cardea doesn't say how much it is on their Website at least I couldn't find it easily but it did have a place in the FAQ where they talked about what are the possible funding sources.

 >> BETH LOY: Okay.

 >> TERESA GODDARD: And the iBeat its pricing is similar to other Smartwatches but again there's a monthly monitoring fee. But they recently sent out an email that you can get Medicaid coverage for it.

 >> BETH LOY: Okay --

 >> TERESA GODDARD: Medicare coverage for it not that we endorse or recommend products here we don't but I called people when that email came out.

 >> BETH LOY: All right. Makes sense.

 >> TERESA GODDARD: Anyway that's a summary of some of the medical management products like we're seeing today this is an emerging category lots of changes happening every week -- every other week in this category now Brittany wants to talk to us about one of her favorite cases I think.

 >> BRITTANY LAMBERT: Now we're going to take a look at assistive technology options and accommodations for information access. Employees with low vision or blindness often need to access various types of information that's typically prevented visually. Employees who are deaf or hard of hearing may also need accommodations to gain access to information in the work environment.

 So in this section, we're going to explore different methods of presenting information in order to make it accessible for those with various disabilities.

 As Teresa said, this is an example from when I first started as a JAN consultant and it's one of my favorites.

 A barista was struggling to read product labels due to progressive vision loss. He was also struggling to find the stacks of clear drink cups.

 In the past, a typical accommodation for this type of issue could be to provide the employee with an i.d.mate talking barcode scanner this could allow him to have the product information read aloud to him in a synthetic voice the newer approach that utilizes wearable assistive technology could be to program an OrCam My Eye to recognize products sold in the coffee shop. We're going to talk a little bit more about this device in just a moment.

 So here we have a few accommodation ideas and wearables for identification. The OrCam My Eye is a wearable device with Optical Character Recognition that claims to be capable of reading information from a computer screen in addition to paper documents.

 The OrCam attaches to the wearer's glasses and functions by -- functions by taking a picture of the printed text in the viewer's line of sight it then reads the text in a synthetic voice it can also be programmed to identify objects and faces. Now, this particular model is about $3500.

 Another option that we have is Aira, this is a system that connects users to a virtual sighted assistant who can describe the user's settings by utilizing a cell phone camera or a camera within Aira smart glasses this is with a monthly subscription plan that starts at $29 a month for 30 minutes of service.

 Now, another really cool product that we became aware of recently at a conference is called WayAround. WayAround is a tag and scan system that allows users to add identification tags called way tags to everyday items like clothing or office supplies.

 The user can then scan these tags to get a readout of what the item is.

 The tags can come in the form of stickers, buttons, magnets, and clips. And the cost of the way tags will vary by the type and number. And one last product for this section is the Oxy-Iso colorblindness correction glasses which were designed to help individuals who have color vision deficiencies by enhancing retinal color perception. And this can be really useful in situations where color differentiation is crucial such as by EMTs and electricians. This can be purchased for about $277.

 And now one more product I would like to talk about here is the BrainPort Vision Pro which is a really interesting device that translates digital information from a wearable video camera into electrical stimulation patterns on the surface of the tongue.

 So users are trained to interpret these patterns as shapes or objects in their environment. And some people have described this as essentially being able to see with your tongue.

 So this is a really innovative way to access information.

 And now we're going to move on to a few devices that can assist with navigation.

 Wayband is a watch designed to enhance the autonomy of wearers with blindness or low vision by providing haptic feedback for navigation. The Wayband uses a virtual corridor to guide its wearers through a series of vibrations that occur when the wearer steps outside of the corridor so essentially if you're walking in the right direction based on the place you're trying to get to, nothing is going to happen. But if you start to go in the wrong direction, this device is going to give you a set of vibrations to say that you need to move back into that corridor.

 Another product here we have is the Lechal insoles which can be worn inside the shoes and provide haptic feedback that tells what direction their destination is in. This is a really neat concept and similar to the Wayband you want to make sure if you're using this kind of thing you're utilizing it in conjunction with orientation and mobility skills and related products to avoid accidents. You don't necessarily want to go out relying purely on these. You want to be using other mobility devices and things like that if you have them and are able to use them. But they can really be a helpful part of that plan.

 Another device is the BuzzClip which is a small and discrete wearable for people that are blind or partially sighted.

 The device uses ultrasound to detect obstacles that may lie directly in one's path. It then notifies the user of these obstacles through vibrations, allowing the user to safely navigate around any object they may encounter.

 The BuzzClip offers head-level obstacle detection which may be lacking from canes or service animals alone.

 Now we're going to explore communication wearables, starting with Assistive Listening Devices. Assistive Listening Devices or ALDs provide a certain degree of amplification to the wearer and can help to reduce problems associated with background noise by sending the sound signal directly to the individual's ears through a headset, earbuds, hearing aid, et cetera an ALD can help an individual to hear and understand important sounds through enhanced clarity and amplification. And coming up we have a few of Teresa's favorite products to talk about so I'm going to let her jump in here.

 >> TERESA GODDARD: Well you know I would anyway.

(Chuckles).

 >> BRITTANY LAMBERT: But when you're working with someone who needs an Assistive Listening Device and they have a hearing aid or are thinking about getting a hearing aid, it can be really crucial to work with an audiologist because not all of these things are interchangeable. One thing to look for is whether or not a hearing aid has a telecoil. If it does, then they may be able to use something that has a telecoil-enabled headset or that has a neckloop.

 Whereas if somebody is using a hearing aid that has a lot of proprietary products it won't do you any good to get an Oticon product. It's incredibly important to know the type of hearing aid that the person is using to know what your options are. And this is for the people who use the Bluetooth enabled features on their hearing aids. These features are also available for cochlear implant users. Pictured we have the mini mic II and a TV streamer both from the Cochlear Company as well as the Cochlear phone clip which is to give somebody who uses the Cochlear brand cochlear implants access to say a cellular phone also pictured we have the safe and clear surgical face mask and this is an exciting option for those who benefit from lipreading but need to work in a medical environment. You can see there's a little clear window where you can see the wearer's mouth.

 And those are $40 a box from Amazon. I looked up a bunch of prices before the show.

 >> BRITTANY LAMBERT: In addition to those products, another thing that can be helpful for communication is communication bracelets. These are essentially low tech Augmentative and Alternative Communication devices that have certain phrases or symbols that the wearer can point to to express fairly simple ideas and phrases to anyone who is around them. So if someone has limited speech or limited ability to use their voice, sometimes they can use something leak this and just quickly point to get their idea across.

 >> TERESA GODDARD: All right let's talk about another example a human resource assistant in the benefits department was having difficulty concentrating due to anxiety and high stress.

 So in the past some typical non-techie ways to approach this have included modified break schedules, flexibility to call a support person, strategies maybe to stay organized. Maybe things like color coding, having a mentor. And a lot of people still benefit from noise cancellation headphones and using white noise. Some people rather than white noise do better with various types of music, especially instrumental music. It kind of depends on the person. But there are some new approaches so one is to allow a person flexibility to use an app either for deep breathing or for -- some of these are syncable to Smartwatches. Some people wear products to monthly their stress and you can -- it can send an alert to you if you're exhibiting a behavior that's associated with stress like breathing quickly for instance. Or breathing shallowly you can also use an app AR a SmartWatch to set reminders to yourself to check in and see how well you're focusing.

 Let's look at some of the options in this category.

(Chuckles).

 >> BETH LOY: Teresa let's fix your headset.

 >> TERESA GODDARD: We're having technical difficulties in the JAN webcast room.

 >> BETH LOY: How is that.

 >> TERESA GODDARD: I don't know Beth this headset is just weird.

(Chuckles).

 >> BETH LOY: I think we got it.

 >> TERESA GODDARD: I need to use one of these apps to deal with my stress from this headset.

(Chuckles).

 >> TERESA GODDARD: So for example there's the Breathewell app that assists the person in doing deep slow diaphragmatic breathing that gives you cues, if you will, to help pace your breathing and you can use it to check your heart rate for someone who needs to check a break to check in with themselves and calm down a little, this could be very helpful.

 Another product that's kind of similar is the Spire Health Tag. So the Spire actually started off as something you would clip onto your clothing. But people had an issue with forgetting to unclip it. And putting it through the washing machine. Thus, the Spire Health Tag was worn which is unique in that it can be washed and dried without completely falling apart.

 The downside is you might have to buy a set of them. And I believe it's 3. 399 for a pack of 8 not $3.99 but $399 for a pack of eight for these guys but it can send information to your doctor and help you monitor your information. The Thync is a product we struggled whether or not to include it's going through iterations you may have people who are using these iterations in the workplace the original Thync we are caging on exactly how it works but it's something you wore kind of near or on your head and it was supposed to help you relax. People described themselves as maybe feeling kind of buzzed when they used it. But the second iteration was more like a TENS unit like you used on your neck like a neck massager like a fancy multi00 dollar neck massager but now the company is focusing on their product as a solution for psoriasis.

 >> BETH LOY: Which one is this.

 >> TERESA GODDARD: The Thync. The Thync.

 >> BETH LOY: Huh.

 >> TERESA GODDARD: Yeah.

 >> BETH LOY: I thought that was the one you were talking about.

 >> TERESA GODDARD: Yeah. So like the original one seems to do something related to brain waves. But I've never been able to get a clear answer on exactly what it does. It's a trade secret but I'm not sure I want to put something on my head that's affecting my brain waves without telling me how.

(Chuckles).

 >> TERESA GODDARD: I kind of wanted to buy the one that's like a TENS unit I was like neck massage yes, please but now they are focusing on psoriasis solutions so it's an interesting evolution for this company.

 >> BETH LOY: That's confusing to me.

 >> TERESA GODDARD: It's confusing to me too that's why we include it in this presentation so people can be hopefully less confused. Is it for psoriasis. Is it not? I don't know.

 But I think the most promising one in this category is probably the health tag but it's something that it looks a little weird if you happen to notice it's falling off someone's clothing you might wonder what the heck it is.

 Let's talk about habit monitoring.

 So there are a number of products that are available to help you monitor your habits and stay on task. The Keen is something unique. It monitors how your hand is moving on the arm you're wearing it to see if you might be pulling your hair, biting your nails. Something of in a nature. And it can send you a vibration when your hand is in position to do the thing that you want to remember not to do and then you'll hopefully learn not to do it for kids it's being used to limit thumb sucking but a lot of people are using it for trichotillomania, pulling your hair out for nail biting that kind of thing.

 >> BETH LOY: I don't know how I feel about this one either.

 >> TERESA GODDARD: I think it depends on the person and how much you want to get rid of the habit I think the main problem is not enough of us have doors anymore we can't be ourselves behind a door.

 >> BETH LOY: Right.

 >> TERESA GODDARD: But that's a problem for another day.

 Now, the RE-vibe is really interesting. It's just a little band with a piece that vibrates and the original version you just set these vibration reminders. And the idea is someone with ADHD would feel a buzz on their wrist and be alerted to check in and make sure they were on task. But they have kind of fancified it if you will, it's still only about $149 but you can actually create reminders that will display on the watch itself so the newer version actually has a little screen. It's very similar to the WatchMinder in that respect.

 Now, Brittany wants to say a few words about wearable device policies.

 >> BRITTANY LAMBERT: So if you have been listening to this webcast and you're thinking, these are personal use items. I don't have to provide this to an employee because it sounds like something they are using in their personal life and just bringing into the office. I hope this section will clear that up a little bit.

 So mobility devices like tablets, cell phones, SmartPhones, Smartwatches and other wearable devices can be valuable productivity tools when used appropriately. And they can also help employees maintain a work-life balance, use concentration and relaxation techniques. Manage health conditions. A lot of really valuable things. But they can also serve as a distraction or worse pose a security risk.

 As a result, many employers are developing and updating policies on the use of personal devices and governing what types of devices and apps can be purchased for employees.

 So in what ways might the use of wearables impact an employer's practices and procedures? I want to note that in talking about these devices, we're not necessarily saying that the employer has an obligation to purchase some of them because they absolutely do fall into that personal use side for some things. With that being said, a lot of these things come with apps. A lot of these things come with devices that might look unusual to the employer.

 And so we want you to be aware of them so that if you see something like the Dexcom or someone is using an app to manage their health, that you don't automatically shut that down. But rather understand this is the time to talk about reasonable accommodation.

 >> BETH LOY: And Brittany that reasonable accommodation may very well just be the policy modification.

 >> BRITTANY LAMBERT: Exactly. Yeah, that might just be a matter of the employer allowing the person to bring the device. It might be modifying the policy to allow them to use something connected to wireless when employees typically don't have access to that.

 So this isn't always about purchasing.

 >> BETH LOY: Okay.

 >> BRITTANY LAMBERT: This can just be a matter of a person -- letting them bring in something that might look a little bit weird.

 >> BETH LOY: Got it.

 >> BRITTANY LAMBERT: And you also want to keep in mind that policies must be applied in a non-discriminatory way. So if you have a policy forbidding certain devices, you don't want to just apply that to a person with a disability you see trying to do it. You want to make sure that you're applying it uniformly. And that you're considering excusing people from that as an accommodation, if needed.

 You might also need to consider whether this device is a personal use item or an accommodation.

 So employers are not typically required to provide items that are needed for daily activities of living both on and off the job. Some wearable devices might definitely be considered personal use items. Meaning that you don't have an obligation to purchase them as an employer. With that being said you might still need to consider allowing them to use them.

 You may also need to consider as an employee or employer being open to the idea of looking at other alternatives. In some situations it might not be feasible to allow the use of certain devices. For example some workplaces may have legitimate security requirements that don't allow the use of wireless enabled devices.

 In these cases, the employees might need to be open to exploring alternatives.

 And ultimately ways that wearables can be used in the workplace include managing time, stress and medical conditions, accessing information needed at work. And meeting communication needs, just to name a few. So be on the lookout for accommodations for those sorts of things.

 >> TERESA GODDARD: And with our last little bit of time we wanted to tell you about a few things that are experimental in beta testing or on the horizon so in picture test testing we have the Allergy Amulet coming out this fall to be able to test your food with your SmartPhone and it's going to be available as a keychain or a necklace that you would use to sample your food and analyze it on your SmartPhone to see if it's going to kill you.

 We're starting to see some new research on tattoo based monitoring of health conditions.

 >> BETH LOY: Can I use this to tattoo my mom so I can keep track of where she is I want to tattoo my mother she's 87 and doesn't listen so can I tattoo her and does it have a GPS.

 >> TERESA GODDARD: Not a GPS tattoo it's designed to monitor health conditions.

 >> BETH LOY: I don't want that.

 >> TERESA GODDARD: You know we are seeing research, too, on tattoo-based bioelectric interfaces.

 >> BETH LOY: All I want is to tattoo her so she can't remove it and to be able to monitor her what she's doing when she's doing it.

 >> TERESA GODDARD: That's a real problem because we have a lot of things that are GPS trackers that are designed for kids and elders but there's very few of them that you can't remove. Maybe welcome to tattoos one day I'll let you know if I see one.

 >> BETH LOY: That's what she needs.

 >> TERESA GODDARD: If I see one I promise I'll tell you because I'll be getting some for my house, too.

(Chuckles).

 >> TERESA GODDARD: Along those lines as far as bioelectric interfaces, we're also seeing exciting new developments in brain computer interfaces. One example are EEG headsets and these are used with software to help control a computer so a person can type using their brain waves if you will and this is actually already being used on an experimental basis by people with ALS and there's a -- experimental basis -- there's a few things that Brittany can geek out on as well.

 >> BRITTANY LAMBERT: A few things that I have seen in conferences that I wanted to talk about is Retissa these are glasses that project things on to the retina it's making rounds in U.S. trade shows but unfortunately right now it's only available in Japan I got to test it out but you might not be able to purchase it here for a while.

 Another really interesting thing is the Orion by Second Sight. So this is a follow-up to their product the Argus II which is an implant and wearable that provides artificial vision via light perception and the Argus was only designed to assist people who lost their vision through retinitis pigmentosa where as the Orion can help anyone who has at some point had the ability to see so it's not limited to that just -- just that one type of vision loss so those are some really interesting things we're seeing on development on the vision side.

 >> BRITTANY LAMBERT: Kind of like --

 >> TERESA GODDARD: Kind of like cochlear implants but for vision so exciting.

 >> BETH LOY: When you two get a tattoo for my 87-year-old mother and I can monitor her we will have another webcast.

(Chuckles).

 >> BETH LOY: In the meantime that's all the time we have. If you need additional information or want to discuss an accommodation or ADA issues please feel free to contact us. We do really appreciate and thank you for attending and thank you, also, to Alternative Communication Services for providing the net captioning.

 We hope the program was useful as mentioned earlier an evaluation form will automatically pop up on your screen in another window as soon as we're finished. We appreciate your feedback so we hope you'll take a minute to complete the form.

 Thank you, Teresa and Brittany. This concludes today's webcast.

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