

DataSpeak – Physical Activity in Child Care Settings: Research Findings and Policy Implications

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Program Transcript

Dr. Michael Kogan – Director, Office of Data and Program Development, MCHB/HRSA

Good afternoon and welcome to today’s program on physical activity in child care settings. Thank you so much for joining us today. This is Dr. Michael Kogan and I’m the Director of the Office of Data and Program Development at the Maternal and Child Health Bureau (MCHB), which is part of the Health Resources and Services Administration (HRSA). The DataSpeak Series is sponsored through our office’s Maternal and Child Health Information Resource Center (MCHIRC).

With us today are three distinguished scholars and researchers in the field of childhood health and physical activity. The first is Dr. Russ Pate, Professor of Exercise Science at the University of South Carolina, Arnold School of Public Health. Dr. Pate will be presenting data on physical activity levels in child care settings, measured both, through observation and the use of accelerometers. He will also discuss research on factors that are associated with preschoolers’ activity levels.

Our second presenter today will be Dr. Dianne Stanton Ward, Professor of Nutrition and Co-Director of the Doctoral Program in the Department of Nutrition at the University of North Carolina at Chapel Hill. Dr. Ward will discuss research based findings on best practice guidelines for increasing physical activity in child care settings.

Closing our program today will be Dr. James Sallis, Professor of Psychology at San Diego State University and Director of Active Living Research, a program of the Robert Wood Johnson Foundation. Dr. Sallis will discuss some of the community based studies funded by the Active Living Research Program and will identify some opportunities for enhancing physical activity among preschoolers through further research and policy change.

Now, before we begin I’d like to introduce Gretchen Noonan, the moderator for today’s program. Gretchen.

Gretchen Noonan - MCHIRC

Thank you, Michael. First, I would like to welcome our presenters and everyone who is joining us in the audience today. We’re excited that you could be here. Before we begin the presentations I have some very brief technical guidance for everyone in our audience.

First, I'd like you to know that your phone line will be muted during the presentations. At the completion of the program we'll be having a question and answer session. The operator will open the phone line for questions and she will provide instructions on how to queue at that time. If you'd like to post a question on-line during the program you can do that using the Questions box on the left side of your screen. Just type your question in the box next to the arrow and hit Enter.

Second, I'd like to point out that you're able to download today's PowerPoint presentations directly from the screen that you're seeing right now. Click on the presentation that you're interested in to highlight it. It's on the left of your screen. Then click Save to My Computer and follow the instructions.

Finally, I would like to call your attention to the DataSpeak Web site, which we hope you will visit after today's program. There you will find resources on today's topics, including some that our speakers will highlight during their presentations. On the Web site you'll also find archives of all of the DataSpeak programs going back to the year 2000. The slide on your screen shows some of the most recent programs that are available and the address that you can use to access them.

Now I'd like to turn to Dr. Russ Pate, Professor of Exercise Science at the University of South Carolina, Arnold School of Public Health. Russ, thank you so much for joining us today.

Dr. Russ Pate – Professor of Exercise Science, Arnold School of Public Health, University of South Carolina

Well, thank you, Gretchen. It's a pleasure. As Michael mentioned in his introduction, my role today is to speak about the physical activity levels of children in preschools and our group here at the University of South Carolina has been interested in this issue for about a decade. We had the opportunity to do a series of studies that have observed physical activity levels in kids in preschools and I'm going to be overviewing some of that work. I am going to begin by describing a bit about how we've done this research, some of the methods that we've used to measure physical activity in kids in preschools and then show some of our findings about just how active kids are when they're in the preschool setting and then, finally, finish with some information from one of our studies looking at factors, really, school factors that we found to be associated with physical activity levels of kids while they're in the preschool setting.

One of our studies that looked very carefully at the physical activity levels of kids in preschools was undertaken in a significant number of preschools here in the Columbia, South Carolina area. We call the study CHAMPS and I'll be referring to this study several times during my presentation.

One approach that we've used in measuring physical activity in kids in preschools is through direct observation. Of course, one of the limitations with little kids is they can't really self report their physical activity validly and so we need objective ways of measuring physical activity in kids this age. One way to do it is to watch them directly in systematic ways and we've developed a system that we call OSRAC, the Observational System for Recording Physical Activity in Children – the Preschool Version, which is a momentary time sampling method that involves a trained observer watching a single child for a 5-second period and monitoring how active they are during that period, as well as the social and physical

environment around them and then taking 25 seconds to record the information on a handheld computer and then they watch again for 5 seconds and go on. We use an ordinal physical activity intensity scale ranging from level one, sedentary and level five would be vigorous activity, the equivalent of the child running. We sometimes collapse those data into sedentary, which would be levels one and two, moderate to vigorous physical activity would be levels four and five.

We observe and record the data in 30-second increments. In the CHAMPS Study we observed each child for a total of 10 to 12 30-minute periods and so we ended up with a lot of observational data on each child that we observed in the study.

To do this procedure reliably takes a lot of training for the observers. We were careful to monitor the reliability of the observers. They enter the data into handheld computers using a specialized software that we developed for this purpose. You're not going to be able to read these codes, but the point here is that in addition to monitoring the child's activity level we also code for the specific type of activity they perform, the location in the school, where they were at the time. If they were indoors we code specifically where they were indoors. If they were outdoors, the same thing and also some of the social environmental factors, the nature of the group that they may be a part of and whether or not they were prompted to be physically active is coded.

In addition to the direct observation system we've worked on the development of accelerometry as an objective measure of physical activity in kids. Accelerometry involves using a small activity monitor that is sensitive to the child's movement. It can be worn, as you can see on this slide, around the child's waist and it essentially is sensitive to all of the movement that they perform. In the CHAMPS Study we started by really calibrating that system so that the data that are logged by the monitor could actually be used to estimate the level of energy expenditure during physical activity. We started by working with three, four, 5-year-olds and actually measuring their level of energy expenditure with a mobile metabolic system that you see the child wearing here. They wore that, as they also wore the accelerometers so that we could calibrate the system. That's an accelerometer. It's a little beeper sized instrument that the child essentially forgets about after about five minutes.

This is a measurement of resting energy expenditure using the mobile monitor and then we also have the kids perform certain structured activities in a controlled gymnasium type of situation while they wore the monitor and the accelerometer. They, in addition, performed a number of unstructured activities in their normal play settings as a method for cross validating the system. So, in the end we do find that activity counts, as logged by the accelerometer, correlates reasonably well with the child's rate of energy expenditure and so it is possible to estimate the child's overall rate of energy expenditure using the data recorded by the accelerometer.

Next, some of our findings using the methods that I've just described: First, using the direct observation, OSRAC, system. We applied that in 24 preschools in the Columbia, South Carolina area. These were fairly diverse in terms of the nature of the school. Twelve of them were commercial facilities. Eight were faith-based programs. Four were Head Start programs. We observed over 400 kids, about 60% of whom were African American. This is the distribution for the overall percent of time for observational intervals at the

different activity levels. Level one, the kids were sedentary and not moving at all over half the time; moving only their upper limbs for about 30%; light activity about 8%; and then moderate, 0.8%; vigorous, 1.8% of the time. So, overall, the kids we observed directly were involved in moderate to vigorous activity for only about 2.5% of the time that we observed them.

This is the distribution breakdown. When the kids were inside the middle bar shows that distribution and when they were inside very, very little of their time was spent in moderate to vigorous physical activity; whereas, on the right you see the bar for the data collected while the kids were outside, a considerably higher percentage of their time was spent in moderate to vigorous. It was still not the majority of their time, but a much greater percentage of their time was spent in so-called MVPA.

Other studies have used somewhat similar direct observational systems. Jim Sallis, one of the participants on the call today, he and his colleague, Tom McKenzie have done work at just sort of observing kids in child development centers and found reasonably similar data for kids outside in a recess-type of setting where you can see they were involved in moderate to vigorous physical activity about 40% of the time when they were outside in a recreational setting.

We've also used the accelerometers as a means of monitoring physical activity in the same kids and those attending the 20 preschools here in Columbia, South Carolina. About 300 kids provided pretty much complete data. This is the distribution of levels or intensities of activity that we observed in boys and girls during the preschool day. You can see that with accelerometry, which is about as objective a way of monitoring activity as you can get, they were sedentary much more than they were involved in light or moderate to vigorous physical activity. You can see that it's down around seven or so minutes out of an hour of observation that they were involved in moderate to vigorous physical activity.

Again, a few other studies have been done using accelerometers on kids in preschools. In one of those by Fisher they observed almost 400 preschool kids. They wore accelerometers for six days and the distribution of activity levels is not terribly unlike that, which we observed. So for moderate to vigorous physical activity expressed as a percentage of observed time you can see it's down in the study below 5%.

Finally, we have been interested in policies and characteristics of preschools that might associate with physical activity in kids attending the schools. In the CHAMPS Study we did measure a number of the characteristics of the school, including the ECERS score. ECERS stands for Early Childhood Environment Rating Scale and it's one of the standardized instruments for evaluating the quality of the preschool, overall preschool environment. It's not specific to physical activity, although that is one of the constructs that's addressed in the ECERS system.

We also recorded a number of other factors that we thought might be related to physical activity in kids while they're in the preschool setting and we did find that kids were somewhat more active in the schools with larger playgrounds and placed lesser emphasis on use of electronic media, had more portable playground equipment, had less fixed playground equipment and overall rated higher on the ECERS scale, so we did find some factors that appear to be associated with the physical activity of the kids in the schools.

So, to summarize, I think that a take-home message from our work on activity levels of kids in the preschool setting is that kids are probably not as active as we tend to think they are. With kids this age there's certainly a tendency to think of them as very, very active. We find that while they're certainly more active when they're outside than inside, their overall activity levels tend not to be that high and so clearly, there is a need for us to learn how we can intervene to ensure that kids are as active as they should be during their time in the preschool. I'll stop there and be glad to respond to questions later in the session.

Ms. Noonan: Great. Thank you so much, Russ. I think that Dianne is going to expand a little upon what you just talked about, so I would like to go ahead and turn to her now. I'd like to introduce Dr. Dianne Stanton Ward. As Michael mentioned, she is Professor of Nutrition and Co-Director of the Doctoral Program in the Department of Nutrition at the University of North Carolina at Chapel Hill. Thank you for joining us, Dianne.

[Dr. Dianne Stanton Ward – Professor of Nutrition and Director, Intervention and Policy Division, University of North Carolina at Chapel Hill](#)

Thank you so much, Gretchen. Hello, everybody. I'm excited to join this wonderful panel and to share some information that we've worked on related to promoting physical activity for children in child care settings.

Children really want to be active and they need to be active. It's quite fundamental for children to be active and it's really atypical when children are inactive. However, adults have often created environments where activity is limited or even discouraged. I think these are unintentional outcomes and not necessarily designed to engineer activity out of a child's day, but I think sometimes we have settings that do that. At child care, where this developmental behavior is so important, opportunities should be developed to provide generous time for children to be active, not just at one time in the morning or one in the afternoon, but really, across the child care day.

We've found that there can be factors, as Russ indicated, at the child care center, which really can influence how active children are during their time there. One actor, who can influence what goes on at child care, is really the parents. A recent report found that child care facilities noted that parents made it harder for children to be active at child care in winter time by not providing adequate coat, hat or gloves so the children could be out of doors and in the summertime sending children in inappropriate footwear, such as flip flops or sandals, making it difficult for children to engage in active play.

Also, sometimes parents in the best interest of making their child's day a happy one, send them dressed up so that they are instructed to be careful not to get their clothes dirty. So these are things that might be what centers see in terms of children who come not ready for activity.

There are other aspects of the child care facility that I'm going to talk about that does influence the activity levels of the children that are there. I do want to make a particular notation about family child care homes. This is an important facility in terms of providing care for a lot of our particularly younger children and although there hasn't been a lot of research to date about physical activity in family child

care homes, the little work that is there indicates that the activity levels are even lower in a family child care home than they are in a child care center.

We have developed an intervention program called NAP SACC, Nutritional and Physical Activity Self-Assessment for Child Care, that is designed to address promoting positive healthy weight environments at child care. The NAP SACC program has both, a nutrition component and a physical activity component. I'm going to talk about the physical activity component today, but there is a comparable nutrition related component.

The NAP SACC program is really a planning model that is designed to work with the child care facility and the staff there to address appropriate environments and policies to promote healthy behaviors. There are five steps in the NAP SACC process. The heart of the NAP SACC program is its self assessment. There is an instrument that's designed for the facility to use to really themselves take stock of where they are and what might be missing in terms of the appropriate environment. Following the self assessment and working with a health consultant the staff at the facility engage in action planning to highlight some areas that they're ready to work on and make a plan for how to make these modifications. The health consultant then provides some educational information through continuing education workshops and over several months provides targeted technical assistance to help the facility reach those goals that they have set.

The last step in the NAP SACC process is to evaluate, revise and to repeat the process. When a child care facility under takes change there may be many, many things that should be changed, but they need to take more of a small bite approach so that they can focus in on areas that they are prepared to change, work on those, get those changed and then move to the next opportunity.

As a part of the NAP SACC program we aggregated national recommendations and standards and reviewed the research literature and also engaged a number of experts to try to develop what should be the standards of practice for nutrition and physical activity at the child care facility. From this work we've recently published the physical activity best practice guidelines. These guidelines offer suggestions and a variety of areas; we have eight areas, which can be developed in enhancing the activity environment at the child care facility. These areas include providing adequate opportunities for being active; providing adequate fixed and portable play equipment, but as I might point out and Russ noted in his slides, sometimes the amount of fixed equipment may be not as important as the amount of portable equipment that children have available to them.

The fourth area is decreasing the sedentary opportunities. We recommend that children be seated no more than 30 minutes at a time without being allowed to move from a seated position. We also suggest decreasing the sedentary environment. Also, Russ indicated that they found in facilities that had more emphasis on electronic media activity levels were lower. We promote having decreased distractions in the form of television, Xbox or computer games, which might be sedentary entertainment for children that may be less appropriate for the child care facility.

I'm going to talk a lot about staff behavior, but staff behavior is one of the best practice areas and the staff are very important for providing appropriate physical activity opportunities for children.

Training and education: Staff need training. Parents need education. We also feel like there is room in the child care week for some formal physical activity education.

Finally, and I know that Jim will talk more about this; there is a need for a specific written physical activity policies at the child care facility.

Having a well rounded and comprehensive physical activity program at child care is very important. It provides the opportunity not only to increase the activity levels of children, which we know is very important for health promotion, but it also decreases the amount of time children spend being sedentary. Recent research has shown that extreme amounts of sedentary behavior actually have unhealthy outcomes and present disease risk. We don't know exactly how early these risks begin, but since they are being observed in the adult populations we want to minimize the sedentary experiences for children.

A child care physical activity program is very important for the development of gross motor skills. There is good correlation between motor skill development and some other learning outcomes and so this is an important contributor to the overall enhanced quality of the experience of the child care facility.

Time out of doors gives the children opportunities to be exposed to nature and to the natural environment. Having fun while moving and starting this, capitalizing on what is really a natural characteristic of children is very important to reinforce early in the child's life. Finally, a physical activity program can enhance child learning in a variety of areas, including mental, social and emotional.

I want to focus in specifically on the teachers, although we could focus in on a number of areas. We are limited in time today and so I wanted to focus specifically on the role of the teacher as the gatekeeper of physical activity at the child care facility. This is a multi-panel slide and I'm going to direct your attention first of all just to the left of this slide and then we'll move on and look at the others. So if you could draw your attention to the first area, there are three; physical environment, instructional environment and behavioral; but I want to talk specifically about the physical environment.

Teachers are the gatekeepers for whether children go outside or not. We do know that a lot of the child care policies talk about going outside, weather permitting and so sometimes the decision of weather permitting is made at the teacher level. So if teachers understand the importance of outdoor activities, if there are policies that clearly articulate it's important then that the teacher observe those policies and take children outside for periods of time.

There are also opportunities in the inside physical environment, although, as Russ' slides show, the activity levels will not be as great as they are out of doors, but there are opportunities inside as well. How teachers use the portable and the fixed equipment and whether they encourage children to engage in natural elements all usually are the responsibility of the teachers.

Let me make sure I've got the right slide here. In terms of the instructional environment, teachers have opportunities in both the structured, as well as the unstructured environment. In terms of the structured environment, this is where teachers are in control of providing educational opportunities for

their children. In terms of physical activity, this can be done in a variety of ways. Teachers can facilitate physical activity by providing active time inside, by adhering to the policy of going outside as well. They can also integrate activity into existing programs, such as circle time or centers or even lessons, so there are ways of making these more active and less sedentary. There is also the opportunity on some regular basis for the child care teacher to actually have a motor skills lesson. These may not occur as frequently as daily, but there should be some regular opportunities for children to develop their gross motor skills.

In terms of unstructured, children should have generous unstructured active play times, most of these occurring out of doors. But children need the time to explore and interact, both with nature and with each other.

Then there are opportunities in transitions and child management to increase activity levels.

The last area is in the behavioral environment and this is actually what the teacher does in terms of interacting directly with the children. Our best practice guidelines recommend that teachers encourage the children to be active; that on occasion they join in with the children in active play. They should not necessarily interfere, but they should reinforce by being part of this on occasion. Teachers should also provide positive prompts for being active and when a child is sedentary, perhaps redirect him or her towards an active opportunity.

Finally, teachers should not use withholding of physical activity as punishment for some previous behavior infraction.

How do teachers do? Well, we tested our best practice guidelines in 94 child care centers across the state of North Carolina. We conducted day-long observations using a standardized observational assessment tool. What did we find? We found, as far as a few of these, staff should join the children in active play. We found that in about 60% of the centers staff did not join the children or did so very modestly.

In terms of staff encouragement of the children to be active, we found that in about half of the centers staff did not prompt or encourage children to be active.

Sadly, we also found that restricting play time is used frequently as a punishment. We found that about 40% of the centers on that day that we observed restricted active play time as a punishment and only in two centers of those 94 were teachers observed as actually increasing active play time as a reward.

In terms of providing an organized physical activity lesson, we recommend at least once a week having an organized lesson for motor development or activity promotion using a standardized curriculum. We found that only 18% of the centers had evidence of this.

Only 4% of the centers documented that they provided any physical activity opportunity for parents. Staff themselves received very little training in the area of physical activity. We found only 25% showed one staff member obtaining some physical activity training. We're not talking about playground safety, which is really a cautionary tale rather than a promotional experience.

If I could summarize briefly: In order to promote successfully physical activity at child care we should provide activity daily. Try for 120 minutes; now again, that's spread across the whole child care day. Add activity time to circle time, centers or other lessons. Make active transitions. Provide for lessons. Take the children outside every day. Use portable equipment and change it up. Enhance the outdoor setting with natural elements; trees, rocks, plantings, pathways. Teachers can contribute by providing positive reinforcement, joining in sometimes, not withholding. Teachers need training. Parents need education. We need policies about these things to encourage the use of active physical activity at child care. Thank you.

Ms. Noonan: Great. Thank you so much, Dianne. I'm sure we'll come back to you during the question and answer session.

Now I'd like to turn to our final presenter, Dr. James Sallis. Dr. Sallis is a Professor of Psychology at San Diego State University and Director of Active Living Research, which is a program of the Robert Wood Johnson Foundation. Welcome, Jim.

Dr. James Sallis – Professor of Psychology, San Diego State University and Director, Active Living Research, Robert Wood Johnson Foundation

Thank you and hello, everybody. I'd like to talk to you about policy options to promote physical activity in child care. I'm going to be highlighting some of the studies from our Active Living Research program.

Just as an introduction to that, our mission is to support research on policy and environmental solutions to physical inactivity and childhood obesity. We contribute to the Robert Wood Johnson Foundation's goal of reversing the childhood obesity epidemic. We focus on groups at highest risk for childhood obesity that you see listed there. We have been working since 2001 to build the evidence base and support studies and we have managed or we are managing about \$27 million in grants. We have awarded close to 200 grants so far. Most importantly for this session, we are using research to inform policy and practice, so we would like people to act on the research that we have.

I want to focus on policies here because if there are no policies related to physical activity in child care then teachers do whatever they think is right, whatever is convenient, however they feel at the moment. So we feel that if policies are in place that systematically promote physical activity in child care that's going to be a real benefit for children across the country or across a state. So there are opportunities for policy change at multiple levels. We see here at the federal level probably the biggest opportunity is at Head Start. Currently and in the past there has been only a mention of physical activity and no specific policies, but some guidelines are currently under development.

There are state licensing laws for child care and these vary dramatically and some are in the process of being changed. There can be local policies and I'm going to present an evaluation of a New York City policy, which might be a model for others to consider. When we look at policies we need to consider the breadth of that policy. Dianne just presented NAP SACC recommendations, so let's say a policy only applied to providing unstructured activity time throughout the day. Well, that would be fine, but it

doesn't relate to equipment. It doesn't relate to teacher training. It doesn't relate to structured activity time, so there would not be much breadth.

Another consideration is there might be wonderful looking policies, but if there is no funding and there are no resources to implement those policies then it's likely that little may happen. So if the policy says that child care centers must have equipment, but there is no funding for equipment, many centers will be unable to implement it.

Enforcement and accountability is another issue. A policy can have very good aspirations, but if there is no enforcement or accountability we would consider that a weak policy, so we look for strong enforcement provisions.

Then evaluation: It's really useful to have some kind of periodic evaluation, not only of whether the policies are being implemented, but maybe barriers to implementation. Evaluation can also identify best practices or very good models that others could emulate.

Now what I'd like to do is to present some data from projects funded by Active Living Research that do some level of evaluation of policies in child care. I'm going to give examples of Head Start at the federal level and then an evaluation in New York City as a local policy. This study is called SHAPES or Survey of Healthy Activity and Eating Practices and Environments in Head Start. The principle investigator is Robert Whitaker and you can see that this study has been published in the Archives of Pediatrics and Adolescent Medicine. In that paper they also report similar data that I'm going to present on eating practice and environments in Head Start.

So, a little bit about Head Start: It's the nation's largest public preschool program. Almost one million low-income children are enrolled. It does incorporate nutrition and physical activity into the mission, so it is well positioned to address obesity prevention in a population of children that is at high risk. However, there were no national data describing practices and environments related to obesity prevention. Keep in mind that there are no specific policies or requirements related to these. This is a descriptive study, so this is a survey study of a large sample of Head Start centers around the country and there was very good participation rates and so this is just reporting the practices and environments as reported by center directors. These practices are very similar to what Dianne just presented in the NAP SACC recommendations; maybe not exactly, but quite similar.

Here you see structured gross motor activity greater than 30 minutes a day was reported by 74%. Unstructured activity more than 60 minutes a day by a similar percentage. Making sure that children don't sit more than 30 minutes at a time, 96% report that. Limiting TV and video to less than an hour a day, 90%. Using an available curriculum on physical activity, just a little over 50%, so that was one of the least common practices. Just one more slide of these: On site, outdoor play areas at every center, 90% said they had that.

Considering the outdoor play area, here are characteristics of those play areas: Large enough for group games, 98%. Natural elements, such as trees or slopes, quite a bit less, at 58%. A large shaded space for

group games to limit sun exposure, 70%. Sufficient fixed play equipment, 93% and similar for portable play equipment and then enough wheeled toys for the children, 81%.

That's a sampling of the reported practices and environments. So the conclusions from this are it appears that a majority of Head Start programs have implemented practices and environments for encouraging physical activity that go beyond what's required in federal regulations because, in fact, none of this is required in federal regulations.

In my view the next step for research is to go beyond the reporting and actually then observe the practices, environments and physical activity in the Head Start centers, because in other areas, such as school physical activity programs, we often see something of a discrepancy between what's reported to be available and what is actually available. For example, a director may see the outdoor space as being sufficient, but perhaps an observer would not agree with that.

I want to move on to the next one. This is an evaluation of New York City policy Article 47. It was conducted by Beth Dixon at New York University. So the background is in January 2007 the New York City Department of Health and Mental Hygiene added physical activity screen time and nutrition policies to the New York City Health Code for licensed group healthcare centers. So I want to summarize what Dr. Dixon found related to physical activity.

This is the policy. The day care centers are encouraged to provide more than one hour of physical activity per day, ensure that 30 of the 60 minutes are structured and guided for children greater than three years of age; to limit sedentary activities to no more than 60 minutes per day; to avoid TV for children less than two years of age and limit the use of TV to less than 60 minutes per day of educational programs or physical activity programs only for children greater than two years of age. So again, you see mostly similarities with the NAP SACC policies or recommendations.

Here are preliminary findings on the use of accelerometers in these centers. There were 12 centers and 176 children that were monitored using methods similar to what Dr. Pate reported. So the accelerometers were worn from drop-off to pick-up time on one day for an average of six hours. The bottom-line here is that just under half of the children met the recommended 60 minutes per day of physical activity.

I would have two comments on this. One is that even when you have this policy in place only half of the children are getting the recommended amount of activity.

The second is when we compare it to what Dr. Pate reported earlier, it does look like these children are likely getting more activity than what was found in preschools without a policy. So the directors believe they were in compliance with the guidelines, but really, it looked like only half of them were and the directors said a major barrier to implementing the guidelines was limited outdoor space. That might be a particularly big problem in New York City, but might be apparent elsewhere as well.

All right. Now I just want to end with identifying a couple of sources of information that might be useful. One is the Nemours Foundation based in Delaware has a substantial interest in child care facilities and

what they're doing to promote physical activity and healthy eating. They just published a guide, To Help Children Grow Up Healthy for organizations serving children and youth and they have other information related specifically to child care and so you can find that through this Web site.

The other is that I welcome you to check out some of the resources from ActiveLivingResearch.org. On the top you see scientific journals where we've collected relevant studies, certainly not all of them on child care, but on a variety of topics related to environment and policy in physical activity.

Along the bottom are resources, such as research briefs and summaries that are written for non-scientists, so we have collected information on specific topics and all of these can be downloaded from the ActiveLivingResearch.org Web site. In coming months hopefully you will see a research summary bringing together research that we have funded on physical activity in child care settings. So I think that even what we have now would be of interest.

Maybe now, Gretchen, we can let the fun begin and start the questions and discussions?

Question and Answer Session

Ms. Noonan: Absolutely. Thank you, Jim, so much. I'd like to again thank all of our presenters for the excellent information that they've provided today. As Jim just mentioned, we can now do our question and answer session. We're fortunate that everyone was able to remain with us and as I mentioned at the beginning, we can take questions both on-line or through the telephone. To post a question on-line there is a box on the left that says, "Questions. Q&A." Just type your question in next to the arrow there and hit Enter.

Yes, so you can press *1 on your telephone to ask your question and that will put you into the queue.

While we're waiting for folks to do that I can start with a few of the questions that have come in on-line. Let's see, Russ, we had a question come in while you were speaking about the preschool programs that you studied. Someone wanted to know whether these are the two to three-hour type of preschool programs or if it's more of a full day, child care, preschool setting that you studied.

Dr. Pate: With the exception of the Head Starts they are full day programs. Now of course, arrival and departure times in preschools are not typically, from our experience at least, as rigid as they are at the upper grade levels, but these were in general all day programs and the exception are the Head Start programs, which, in our area, are half-day programs.

Ms. Noonan: Great. Thank you. I don't know if we have anyone on the phone who wants to ask a question. Okay. I'll go ahead and continue with the on-line questions. Let's see, we had several questions come in and, Dianne, I don't know, you might be the first person to tackle this. We had a couple of questions come in about how to engage and educate parents about limiting screen time and other sedentary activities. We're wondering if any of the speakers have recommendations in that area or if there are any findings about this.

Dr. Ward: Well, there have been some efforts to try to promote reduced television time. One of the ones that has gotten some positive results has been Brocodile the Crocodile by Barbara Dennison. It's a program that actually provides some active lessons at the center and has some home based activities that the children ask parents to engage with them in. I know that one of the props that was used was the kids made a sign that had no TV and had a circle and an X across it, so I think as anything that we do at child care, it is a cooperative arrangement with those child care staff, as well as the parents, being a partnership. I think reaching out to parents with information and also providing both, a two-way street between the center and the parent as far as modeling those behaviors at the center level will also help for parents to model them at home.

Ms. Noonan: Great. Thank you, Dianne. If any of our other speakers want to jump in, go right ahead.

Dr. Sallis: Let me just say one thing; that we have quite good evidence now that children who have a TV in their bedroom watch a lot more and that this is a risk factor for obesity as well. I think the recommendation based on that is make sure you don't allow the child to have a TV in the bedroom.

Ms. Noonan: Okay. Great. Thank you. We have plenty of questions coming in here. We had one person ask whether you feel that creations of natural play spaces will increase activity levels. I don't know who wants to speak to that; maybe Dianne?

Dr. Ward: I'll start that, but I'm sure Jim has an opinion as well. Although this is a very preliminary area of research in terms of the amount of research that's out there, there is good evidence that natural environments do have some engaging properties that tend to have more long lasting engagement for children; whereas, sometimes the large playground equipment, the children may use them and then they just sort of hang out and sit on them. But some of the work that's been done is showing that if we can provide pathways and we can use trees, plantings, garden areas, rocks, shrubs, flowers that these things tend to have attraction to children and that children not only learn things, but they also interact with them. Jim may want to offer an opinion as well.

Dr. Sallis: Just one comment. I agree with what Dianne said, that we wish there was more research on this. One study that compared different kinds of playgrounds with non-natural equipment and natural settings found that the activity level had less to do with the materials that were used rather than how they were laid out. So if there was kind of a pathway or a linear connection that connected different interest points or different pieces of equipment that tended to generate more moving back and forth among the elements rather than what they were made of.

Dr. Pate: I might add one point. I certainly agree that the nature of the physical environment matters and, as Jim has emphasized, I think we do need to learn more about just which are the most salient promoters of physical activity. In the physical environment in the preschool I think, as Dianne has mentioned, there is at least some evidence that having mobile play implements is helpful.

But I want to emphasize a point that Dianne made, which is the critical role that the teacher plays. From our work in trying to promote activity in preschools we're, I think, increasingly inclined to conclude that the teacher really does need to engage with the kids. We've observed kids as they move from the inside

to the outside to the play space and their activity levels tend to drop pretty quickly. They're fairly active when they first go out and then it erodes fairly quickly. We're at least tentatively concluding that we probably need to learn good ways to encourage the teachers to engage with the kids as their natural activity level declines after a few minutes in the outdoor play space.

Ms. Noonan: Great. Thank you very much, all three speakers. Let's see; we have a few more questions here. One of the questions that came in; I think this is directed at Dianne, but I could be mistaken so, please, anyone speak up; but whether the policies for physical activity specify how much of the time should be spent on light or moderate or vigorous and whether the policies provide examples of the types of physical activities to the centers.

Dr. Ward: In the best practice guidelines we do not specify the amount of moderate to vigorous physical activity. The reason that we have not chosen to take that approach is that the research in this area linking the intensity of the activity to the long-term to the health outcomes isn't quite as well researched with the younger child and that younger children tend to operate kind of in bursts of activities and sometimes our ability to actually do these monitorings may not be picking up the bust of activity. But the guidelines do specify or suggest that children should have generous time allotted for physical activity. This is both structured and unstructured. They should have outdoor time on a daily basis. There should be teacher-led activities at least a couple of times a day. So we don't specify how much light, how much sedentary. We do say avoid long periods of sedentary, which we defined as 30 minutes or more, but we also said that children should have just enriched opportunities. I think most of us; I can't speak for my two colleagues here; but I suspect that we all are quite similar and that we would be happy if children just got more and then we can worry about how intense that more is. I think giving children opportunities and an adult engaging with them we will find that we achieve a great deal more activity than we currently have.

Ms. Noonan: Great. We did have another question that was related, but I think that you just touched on it. I just want to give you the opportunity to expand at all if you might, but someone asked a question about structured physical activity and outdoor play, of course, both being predictors of physical activity and that there has been discussion of specifying a number of occasions rather than an amount of time. You did just talk about that a little bit, but this person wanted to know some of the pros and cons of using occasions rather than time. I don't know if you have any extra information about that.

Dr. Ward: It's a very good question and there are policies, as Jim described, that have gone ahead and put minimum standards, 60 minutes a day. For a child in full-time child care across seven or eight or sometimes ten hours a day that one hour doesn't seem to be minimally sufficient. Then they'll specify that on top of that 30 minutes needs to be structured. Well, although those are not terrible policies and certainly may get more outcomes than we currently have, the NAP SACC using, again, what we had available to us, which was national level of recommendations and the available research and all of the expert opinion that we have, we could not come up with an exact amount of structured time. There is the ... recommendations that said it should be 60 minutes and that there should be 120 minutes overall, but we weren't prepared to make explicit recommendations on exactly how much structured time.

I think that child care providers and professionals need to understand that that “structured activity” is across, at least in my opinion, the broad range of what that means. I don’t advocate and the NAP SACC guidelines do not advocate a continuous 30-minute period of education, structured, teacher led activity at one time, but to try to have that across the child care day.

I’m not sure I did a good job of answering that, but we do suggest occasions. I think there may be policies that will feel better about making that very specific. I think in general those policies can be consistent with the NAP SACC best practice guidelines as well.

Ms. Noonan: Great. Thank you so much, Dianne. I’m afraid that’s all of the time we have for our questions and answers today. I do want to mention we had someone send some information in to us that I just want to share real quickly.

Apparently there is collaboration between the American Academy of Pediatrics, the Public Health Association and the National Resource Counsel. They’re putting out a publication called Caring for our Children and that will be out this summer. It will have standards related to physical activity, nutrition and screen time, so we just wanted to go ahead and mention that.

If you think of any more questions you are free to submit those to us via e-mail through the end of the week using the e-mail address mchirc@altarum.org. Answers from the presenters will be posted with the program archive on the DataSpeak Web site. The questions that we didn’t get to today we will also have written answers for you as well.

Before you go we’d like to let you know that we will be broadcasting several more DataSpeak programs in the coming months. Announcements about these programs will be sent out through e-mail to everyone who registered for today’s program. We’ll also be posting announcements on the DataSpeak Web site: <http://www.mchb.hrsa.gov/mchirc/dataspeak/>.

Finally, before you log out we would really appreciate it if you would take a moment to provide us with some feedback on today’s program. You can do that by clicking on the program evaluation link that will show up on your screen. A short survey will open up in a new window. Today’s program is complete. Thank you so much for joining us. Have a great afternoon.

About the MCHIRC

The Maternal and Child Health Information Resource Center (MCHIRC) is dedicated to the goal of helping MCH practitioners on the Federal, State, and local levels to improve their capacity to gather, analyze, and use data for planning and policymaking. The MCHIRC is funded by the Maternal and Child Health Bureau's Office of Data and Program Development under the supervision of Gopal Singh, Ph.D. The Project Director is Renee Schwalberg, MPH.

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