

Purposeful Play

by

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CHAPTER ONE

INTRODUCTION

Play is deemed “child’s work,” and the words echo through many homes: “get away from here and go play!” Has one really paused to think of the implications of those words: “go and play?” That repeated command to the child has a profound effect on the developing body. That simple command of “go and play” once held the unspoken command of go outside and don’t come home till dark, today it means go in your room and play video games on your TV! How did this evolution occur and did we take notice of what impact it would have on the developing body?

This essay intends to look through the eyes of the Registered Occupational Therapist at the evolution of play and handling of the young child and to point to some of the physical differences noted, often for the worse, that have occurred in spite of our advances in technology.

A LOOK BACK AT PLAY

On October 3, 1955, the Mickey Mouse Club debuted on television and Mattel took a giant step to advertise the first toy outside of the Christmas season, Thunder Burp, which was a machine gun (Spiegel, 2008). This was a historic moment and Mattel’s giant leap would change the way children interact in two ways: first a show directed to

children, and second, toys advertised out of the Christmas season. What a draw to the television. According to Classic-TV.com, television shows available for children's viewing went from a mere 11 show's in the 1950's to 100+ show's in the 1960's, calling the child in the home in front of the TV and away from outdoor fun (www.classic-tv.com).

After TV comes along, drawing our children into the living rooms of the family home, seated nicely on the couch, another evolution occurred, the birth and popularity of the video game. According to M. Bellis, in 1971 the Galaxy Game and Computer Space emerge, the first arcade video games. In 1972, the ever popular Pong comes to life, a must have for many American homes (www.inventors.about.com). Through technology, play was moving from outside to inside, from gross motor fun that involved running, jumping, swinging, climbing and walking to sitting and watching TV. Technology was not done with us yet. The perception of the child was changing from rough and tumble to ever fragile.

Some good did come from this technology as the car seat evolved and standards were drawn that kept children safe in the car. But with this technology, came overuse of the product! The car seat subbed as a carrier and soon it evolved to clip into a stroller frame. Then it clipped into a grocery cart, and with the blink of an eye it became a "purse" for the infant!

Children have gone from mom's arms to carriers, from running in the back yard to sitting on the couch or in front of a computer playing video games. The results have been devastating! We are creating a new society of children with poor trunk control, and

poor scapular stability, who are shallow breathers because they are not getting those early opportunities to be active (*Sensory Secrets*). These deficits show up in the classroom through poor handwriting skills, poor fine motor skills. Calls for help come throughout the classroom: “I can’t tie my shoes; can you open my juice box; my hand is too tired to color.” Children are standing around at recess time and seem disinterested in the playground equipment (McKeever, 2009). The list goes on. The looming question is how do we change and can we change the monster we have created in the name of safety and technology!

CHAPTER 2

The Evolution of Play from “Outside” to “Inside”

“Ring around the rosie, a pocket full of posies, ashes, ashes we all fall down!” A popular nursery rhyme recited over and over in playgrounds for over a century has found children grabbing hands and walking in circles only to fall to the ground at the end of the song, leaving these little souls in giggling heaps, often to rise and do it again with little care to valuable training the small body is receiving from such a simple song. The value of this game has been unspoken and undocumented, mere child’s play, a simple song. Nobody noticed the true value of child’s play and this may be how the evolution of play has occurred.

Children have gone from running and playing outside to the confines of their home, and often the confines of their room, staring into a computer screen or worse yet to the small screen or touch pad of a mobile phone. Spontaneous play, such as running through the backyard, is a thing of the past. These changes have come at a price. News media rings out: “childhood obesity is on the rise,” with the Centers for Disease Control reporting in 2010 that 17% of children and adolescents are obese (www.cdc.gov). The incidence of asthma is also on the rise according to the CDC (www.cdc.gov). Can these numbers be a result of the evolution of play? Children are moving less, and their toys are working harder for them.

Local History of Play

Estelle Zitello, a 92 year-old assisted living resident, reminisces about her childhood play, stating that her mom did not even have to finish the sentence, it was a simple word: “Go!” She and her two brothers knew that they were to leave the house. Play time was outside and away from adults. Ms. Zitello said her only memories of toys were of a jump rope and a ball, and the ball was a shared toy. The family had a wagon that was used to haul groceries and it was not a toy, although on special occasions she and her brothers would get rides in the wagon. She remembers toys were only bought at Christmas time. She received one toy and another toy was shared with the entire family. Ms. Zitello did not have a TV until she was an adult.

Christine White, a 78 year-old retired school teacher, remembers with a smile her mother telling her to “Go play!” Ms. White reports without a doubt that meant to leave the room. She stated they used their imagination when playing and most of their toys were homemade. She laughed as she told of how she would collect “mop strings” that fell off the mop as her mother cleaned the floors and save them as hair for her baby doll. The baby doll was a coke bottle because of the nice indentation that served as a waistline for the doll. The White family had one bicycle and a wagon for the children to enjoy, but the wagon was considered a toy for boys. She also said toys were only bought at Christmas and they were to be shared with her brothers and sisters. Ms. White remembers her first television was purchased in 1957 as her brother was returning from the military.

Dr. Helms, a 62 year-old physician, reports that he was one of four boys and that most of his toys focused on sports. He received his own toys at Christmas, and most of

his toys involved imaginary play when he was younger. He remembered one of his favorite toys was a gas station set. Dr. Helms reports that play was nothing like it is today: you stayed outside until dark, and you got dirty!

Lynn Davis, a 45 year-old physical therapist, reports that her early toys were a jump rope, a ball, and oatmeal boxes her mother saved to use as blocks. She was the first to report having board games, which she played with her siblings and parents. Each child in the family received his own Christmas present and there was always one family gift as well. She remembers always having a TV but there were rules such as no TV after 9:00. Ms. Davis stated that her parents watched TV with her and her sisters. They did not have video games or a computer growing up.

All of the above interviewees are from generations in which the culture dictated children should play outside, toys were not to be bought outside of the holiday season, and the child was to entertain him or herself.

Meet Josh

Joshua Cox is a 24 year-old Occupational Therapy Assistant, the youngest of three children. Josh reports that in 1996, two weeks before his grandfather died, his parents were the first in the neighborhood to purchase a computer! Josh immediately fell in love with it and soon became withdrawn, gained weight, and became a bully. His parents were afraid that Josh was grieving the loss of his grandfather and took him to counselor. The counselor agreed with his parents that Josh was grieving and he began weekly counseling sessions. Josh reflects back on that time in his life and reports he

thought he was really something because he had a computer and nobody else did. He would let his friends come over and watch him use the computer, but he would not share it. He quickly became addicted! Reflecting on the past, Josh sadly recounts that he was not grieving the loss of his grandfather but rather becoming addicted to the Internet. Josh reports he went from an active normal-weight 15 year-old to an overweight teenager who did not care. Josh reports chronic neck and back pain and frequent bronchitis.

How Electronic Game Play has Changed Development

As play changed, electronics began to replace toys that required gross motor movements. The way children used their bodies also began to change. These changes had profound effects on the development of many physical aspects of the body. Large muscle groups were now being supported in chairs, and the demands of carrying the body through space were decreased. There were fewer demands placed on the cardiac and respiratory systems and fewer calories were being burned. Computer and video interactions usually occur in seated positions. Therefore, children are spending less time on their bellies or in a prone position. Negating these positions does not allow for proper scapular development (shoulder stability), which is critical for precision fine motor movements. This can also lead to back problems because of poor arch development of the spine (Solomon, 2006).

The CDC has reported rises in childhood obesity, asthma and respiratory allergies with unknown causes. Children are sitting in front of a screen using very little vital capacity and very few muscle groups (www.cdc.gov). Teachers are reporting poor

handwriting skills and poor fine motor skills. There is talk of discontinuing cursive handwriting instruction because of increased computer use in many school districts (*Sensory Secrets*). These discussions are masking the true deficits, which are poor scapular stability, underdeveloped arches in the hands, poor muscle development of the shoulders and forearms (*Sensory Secrets*) because of the lack of use of the arms in gross motor and weight-bearing activities.

Chapter 3

“Scripted” Toys are Limiting Imaginary Play

A Look Back at Play

Howard P. Chudacoff, a cultural historian at Brown University, in an interview with National Public Radio (Spiegel, 2008), reported that almost overnight, children’s play became focused as never before on things: toys themselves. Chudacoff, who published *History of Child’s Play*, argues that for most of human history what children did when they played was roam in packs large or small, more or less unsupervised, and engage in freewheeling imaginative play (Spiegel, 2008). They were pirates and princesses, aristocrats and action heroes. Chudacoff says they spent most of their time doing what looked like nothing much at all (Spiegel, 2008): “They improvised their own play; they regulated their play; they made up their own rules.” But during the second half of the 20th century, play changed radically. Instead of spending time in autonomous shifting make-believe, children were supplied with ever more specific toys for play and predetermined scripts. Instead of playing pirate with a tree branch they played Star Wars with a toy light saber (Spiegel, 2008). Chudacoff reports this commercialization and co-optation of child’s play begins to shrink the size of children’s imagination.

Evolving Play

The second half of the 20th century brought other changes: middle-class families were becoming increasingly concerned about achievement and began to look for ways to

enrich the developing child's mind (Spiegel, 2008). Soon children were driven to Karate classes, gymnastics, summer camps and many more structured environments. Clearly the way that children were spending their time was changing.

An executive function (higher level thinking) researcher, Laura Berk, reports that there has been a decline in the capacity for self-regulation. She was referring to a study completed by psychologist Elena Bodrova at Mid-Continent Research for Education who attempted to replicate a 1940's study done on self-regulation. Psychological researchers asked kids ages 3, 5, and 7 to do a number of exercises and activities. One of the activities was to stand perfectly still. In 1940, the 3-year-olds could not stand still at all, the 5-year-olds could do it for about three minutes, and the 7-year-olds could stand pretty much as long as the researchers asked. In 2001, the researchers repeated this experiment with quite different results; the 5-year-olds were at the level of the 3 year olds 60 years ago and the 7-year-olds were barely approaching the level of the 5-year-olds 60 years ago. These findings are sad because self-regulation is incredibly important (Spiegel, 2008). Poor executive function is associated with high dropout rates, drug use and crime (Spiegel, 2008). Berk is quick to report that on the flip side, good executive function is a better predictor of success in school than a child's IQ. Children who are able to manage their feelings and pay attention are better able to learn. Self-regulation predicts effective development in virtually every domain (Spiegel, 2008).

According to Berk, one reason make-believe is such a powerful tool for building self-discipline is because during make-believe, children engage in what's called private speech: they talk to themselves about what they are going to do and how they are going

to do it (Spiegel, 2008). Unfortunately, the more structured the play, the more children's private speech declines. Essentially, because the children's play is so focused on lessons and leagues, and because kids' toys increasingly don't call for imaginative play, kids aren't getting a chance to practice policing themselves.

Brodove and Leong report that educators have always considered play to be a staple in early childhood classrooms. The growing demands for teacher accountability and measurable outcomes for pre-kindergarten and kindergarten programs are pushing play to the periphery of the curriculum (Educational Leadership, 2003), however early childhood teachers admit that the benefits of play are not as easy to understand and assess as, for example, children's ability to recognize letters or write their names. Teachers report that they feel obligated to prove that play not only facilitates the development of social competencies but also promotes the learning of pre-academic skills and concepts. Teachers believe that a certain kind of play has its place in early childhood classrooms and that the proponents of play and academic learning can find some much-needed common ground (Educational Leadership, 2003). Children's engagement in pretend play was found to correlate positively and significantly with such competencies as text comprehension and metalinguistic awareness and with an understanding of the purpose of reading and writing (Educational Leadership, 2003). The common problem continues: the ability to measure and report its value effectively (Educational Leadership, 2003).

Looking Back at Toys

The top toys of the 1960's were Barbie, Etch-a-Sketch, Troll Doll, Easy Bake Oven, GI Joe, Operation, Action Man, Battle Ship and Light Bright. All had components of imaginary play built into them. Barbie could go anywhere, dress in many outfits, construct a house out of a discarded box, etc., possibilities were endless. The same was true for GI Joe, Troll Doll and Action Man; the young child could stir up any adventure for the action figure. The lines of the Etch-a-Sketch could move across the planet and could form a number of symbols and elicit any number of stories in a young mind. The Easy Bake oven could prepare treats for any party, and of course anybody could perform surgery with operation (top 10 Christmasgifts.com).

Top 10 Christmas Toys for 2011

With the rapid advancement of technology, companies are continuously coming up with fresh and new ideas for toys. Every year, an entirely new set of toys is launched in the market with hopes of targeting young ones during the holiday season. This year's top 10 toys are the second generation iPad, Money soap, Nintendo DSi, ZhuZhu Pets, Syma S107 Remote Control Helicopter, Spy Net Video Watch, LEGO Technic Snow Groomer, LED Color Morphing Nonstop-Top, PlayStation Move, Halo Reach for Xbox 360. Of this list of 10 items, one is not a game but a bar of soap with the promise of money hidden in the soap (a bill ranging from 1 to 50 dollars), one battery-operated animal that runs through his own hamster tunnel, and Lego set. The other 7 items are all video games! Not one game on the 2011 must-have list has any imaginary play attached

to it. Each toy comes neatly boxed with personal scripts (www.christmas-toys/top-10-toys.html).

Our children are getting beautiful toys that are neatly wrapped, but they are not forced to use their imagination or their bodies. They are passive participants in an entertainment environment.

Mastering reading, writing and arithmetic form our academic essentials but are not really the “basics” from which learning takes place (Schneider, 2001). Physical education, recess, unstructured play time, and practice/repetitive work are being minimized.

Foundational skills usually develop automatically during the time that children play, explore their environment, and make up their own games and activities. Children of the “Boomer” generation spent their free time playing jacks, red rover, statues, red light-green light, Mother may I, hide-and-seek, four square, and double Dutch jump rope. All of them involved settling on the game to be played, gathering enough people to play, structuring the rules so that everyone understood them, and then actually playing the game for the fun of it (Schneider, 2001). The skills that develop the foundation for learning involve moving, feeling our bodies react to the pull of gravity on our muscles, touching, smelling, tasting, hearing a variety of voices, using our imagination, using private speech. As children learn the skills in patterns of repetition that are fun, their foundation for the future is laid (Schneider, 2001).

Today’s “programmed” children may not know how to occupy themselves unless they are in front of a screen, TV, computer or touch pad, or are being driven to a class,

sports practice, or other planned activity or entertainment. Increasingly they're being cheated of experiences that have multidimensional opportunities, such as simple playground activities or unstructured neighborhood play. Our toys have become "sophisticated" to the point that, with the touch of a button, the toy creates the adventure and entertains the child, who is the passive participant in the play session.

Breaking News, Fox News

As parents and professionals begin to take note in the changes in American children the rise in obesity, the physical changes in the developing child that include poor scapular stability, coordination deficits, poor fine motor skills, declines in test scores - they are beginning to search for answers to the problems! On September 12, 2011, Fox News released a study completed by Dr. Dimitri Christakis, a child developmental specialist at Seattle Children's Hospital. He conducted a randomized controlled study completed with 60 kids who watched fast-paced cartoons. Results indicated that they did less well on tests of attention and cognition than those who spent the same amount of time drawing. These kids also did less well than children who watched a more realistic, slower-paced educational cartoon about a pre-school boy. Parents should be aware that fast-paced cartoons like, "Sponge Bob Square Pants" have scene shifts about five times a minute. These scene shifts "could at least temporarily impair young children's executive function," (www.foxnews.com).

Christakis said parents need to realize that fast-paced programming may not be appropriate for very young children: "What kids watch matters, it's not just how much

they watch,” he said. University of Virginia psychology professor Angeline Lillard, the lead author, said Nickelodeon’s “SpongeBob” shouldn’t be singled out. She found similar problems in kids who watched other fast-paced cartoon programming. She said parents should realize that young children are compromised in their ability to learn and use self-control immediately after watching such shows. “I wouldn’t advise watching such shows on the way to school or any time they’re expected to pay attention to learn,” she added (www.foxnews.com).

Tying it All Together

In the past, children learned how to play at a mature level simply by being part of an extended multi-age group within their own family or in their neighborhood. Unfortunately, with children spending more time in age-segregated groups, that is no longer the case. TV shows and computers, even with carefully-selected educational content, cannot replace live play mentors (Bodrova & Leong, 2003). Left to their own devices, children rarely come up with truly imaginative play scenarios because they lack knowledge about the roles and the language needed. As a result, play themes in most classrooms are limited to family, hospital, or store, with few roles to play. Some children will not play without realistic props and may not be able to make their own props. They lack the imaginary skills needed (Bodrova & Leong, 2003).

Creating Imaginary Situations

Teachers need to take the primary role in helping children develop and maintain their imaginary play skills. Teachers can maintain a balance between supporting mature play and keeping it truly child-initiated. Bodrova states that a guide in the development of imaginary situations is to provide multi-purpose props that can stand for many objects. For example: packing peanuts look like marshmallows, and pieces of yarn make great spaghetti. During small group time, teachers can show the children different common objects and brainstorm how they can use them in different ways in play. A pencil can be a magic wand, a thermometer, a spaceship, a stirring spoon, or a conductor's baton. Bodrova goes on to report that children in classrooms where imaginary play was supported not only mastered literacy skills and concepts at a higher rate, but also developed better language and social skills and learned how to regulate their physical and cognitive behaviors (Bodrova & Leong, 2003).

Chapter 4

Hyper Focus on Safety

One hundred years ago, childhood deaths were common, and many families had to learn to accept the loss of a child (Case-Smith, 1996). Today, children's deaths are more unusual and often unexpected, even though a child may have a terminal disease. Our belief in the medical system and its ability to cure us leaves us all unprepared for death (Case-Smith, 1996). These opening sentences in no way are meant to infer that a child may be killed on a playground, but with technology changes, parenting philosophies have changed also.

For children, play is easy, you can do it anytime, anywhere, with anyone, and it's fun. For adults, play is hard. They want to know if it's safe for their kids, if it's educational, if it promotes motor coordination, if it's environmentally friendly, if it will look good on a pre-school application (Cohen, 2007). "Kids should have their own world, and parents are a nuisance," reports Chudacoff, who is trying to show that adults can be too intrusive in his latest book, *Children at Play: an American History*. Chudacoff reflects in his book on being interviewed on a hot, muggy day in Providence standing in the middle of a small brightly-colored playground with a rubberized base beneath the swings and soft wooden chips around the plastic slide and monkey bars. With school out, many children were at camp or on vacation or in an air-conditioned living room watching

television. Wherever they were, they were not there (the playground). It was deserted (Chudacoff, 2007).

Playgrounds first found their way to the United States from Germany in the 1880's. They spread after the turn of the 20th century with the idea of keeping children and working-class boys from running wild on the streets of growing cities and from the seductive lure of pool halls and penny arcades (Chudacoff, 2007).

A Look Back at Early Play Grounds

Slides used to be dangerous. After climbing up those sandy, metal cross trax steps, one would stare down at the steep ride below. The slide was burning hot to the touch, a stovetop set to high all day under the summer sun, just waiting to greet the underside of your legs with first-degree burns as you enjoyed the ride. To top it off, there were no cute plastic side rails or encapsulated tube-slides, which meant that if you went too fast or aimed your legs poorly, your shoes would grip-skid on the metal, and you would spill over the slide, landing face down with a sickening thud in a bed of gravel (www.fla-playground.com).

It wasn't just slides, either. Everything in the playground was more dangerous. And they were different and unique, seemingly put together by the neighborhood handyman who in a burst of creative energy one Saturday morning emptied his garage of old tires, 2x4's and chains, and just nailed it all together (www.fla-playground.com).

There were wooden tightrope beams suspended high in the air, daring the confident, athletic kids to attempt a slow, heart-pounding high wire walk while other kids

encouragingly showered them with handfuls of sand and pine cones (www.fla-playground.com).

There were fire poles two stories high, just a cheap, simple pole planted deep in the ground. It was popular and educational too, quietly introducing children to concepts like gravity, friction, and badly sprained ankles. There was a certain Fire Pole Form too, a kind of arms-on, cross-legged-spider wrap maneuver that was both awkward and majestic at the same time (www.fla-playground.com).

There was the Merry-Go-Round, but not the kind with lights and plastic horses going up and down. This was just a giant metal circle that laid about a foot off the ground and could be spun, usually by someone standing beside it or running alongside of it. One could whip you into a world of unimaginable dizziness. A couple of kids would fly off as a result of the G-forces, but most would hang on, teeth gritting, eyes squinted, cheeks flapping wildly against the wind, until the Merry-Go-Round came to a slow stop and finally let you off. Then you'd walk away in different directions, some kids hitting tree trunks head on, others falling down nearby hills from the dizzy ride (www.fla-playground.com).

There was the see-saw. You had to be gifted at picking your partners' weight and withstand the bumps and bangs of the cherry bombs and hope your partner would not bail with you in midair leaving you to crash to the ground. Those classic playgrounds are hard to come by (www.fla-playground.com).

According to Florida Playgrounds, a playground equipment distributor, everything is plastic now: unaffected by temperature, easy to disinfect, and bendable into all kinds of safe-t-shapes, the sharp, rusty nail heads of yesterday replaced with non-toxic washable adhesive poured from a cauldron of polymer and Purell (www.flaplayground.com).

New playground style is ubiquitous: primary-colored pipe-rail play units moored in a moat of rubber matting, the number of moving parts held to a minimum, sand and swings often banished, safety and low maintenance elevated to pre-eminent concerns (Scoot, 2000).

Playgrounds are safer than ever, proponents say, a critical consideration when hundreds of thousands of children are reported injured on playgrounds each year. But detractors say many of the playgrounds are dumbed down, that the pursuit of safety and lawsuit-avoidance has eclipsed the goal of challenging play (Scott, 2000).

Many point to what M. Paul Friedberg, a landscape architect and pioneering playground designer in the 1960's, calls "safety fundamentalism," and what others say is a tendency of affluent two-career parents to try to "childproof the world" (Scott, 2000). Scott continues by stating "We have a very narrow view of what children need." "We don't understand that play is important enough to all children to get dirty" (Scott, 2000). Scott reports that Anthony Pellegrini, a professor of educational psychology at the University of Minnesota, makes the case that American playgrounds are far better than they once were, even if they are not as interesting as they might be. The idea was to

create equipment that could be used in many ways, and encourage decision-making and group play (Scott, 2000).

Through emergency room data, the newly formed Federal Consumer Product Safety Commission discovered during the 1970's that several hundred thousand young children a year were being injured on American playgrounds, many of them in falls on surfaces like resilient asphalt preparations (Scott, 2000). In 1981, the commission published its first set of playground safety guidelines. Then, at the request of playground equipment manufacturers, the American Society for Testing and Materials drew up its own voluntary standard for public playground safety. Neither was mandatory, but they became the measure litigators used to judge a playground's safety in court (Scott, 2000). Many manufacturers now work hard to comply with standards and guidelines, and in doing so, they have to some degree dumbed down their playground equipment. Many manufacturers now avoid making certain types of apparatus, like overhead ladders for swinging and fire poles for sliding (Scott, 2000).

Can Playgrounds Be Too Safe?

John Tierney reported on this concept for the *New York Times* in July 2011. The New York City playgrounds commissioner, Henry Stern, reported that he grew up on 10-foot-high jungle gyms and never forgot how good it felt to get to the top of them. Stern continued, "I didn't want to see that playground bowdlerized." Tierney discovered that Stern's philosophy seemed reactionary at the time, but today it's shared by some researchers who question the value of safety-first playgrounds (Tierney, 2011). Even if

children do suffer fewer physical injuries, and the evidence for that is debatable, the critics say that these playgrounds may stunt emotional development, leaving children with anxieties and fears that are ultimately worse than a broken bone (Tierney, 2011). Children need to encounter risks and overcome fears on the playground, according to Ellen Sandseter, a professor of psychology at Queen Maud University in Norway. “I think monkey bars and tall slides are great. As playgrounds become more and more boring, these are some of the few features that still can give children thrilling experiences with heights and high speed” (Tierney, 2011).

According to Tierney, after observing children on playgrounds in Norway, England and Australia, Dr. Sandseter identified six categories of risky play: exploring heights, experiencing high speed, handling dangerous tools, being near dangerous elements (like water or fire), rough-and-tumble play (like wrestling), and wandering alone away from adult supervision. The most common is climbing heights (Tierney, 2011). “Climbing equipment needs to be high enough, or else it will be too boring in the long run,” Dr. Sandseter said. “Children approach thrills and risks in a progressive manner, and very few children would try to climb to the highest point for the first time they climb. The best thing is to let children encounter these challenges from an early age, and they will then progressively learn to master them through their play over the years” (Tierney, 2011).

Sometimes of course, their mastery fails, and falls are the common form of playground injury. These rarely cause permanent damage, however, either physically or emotionally. While some psychologists and many parents have worried that a child who

suffered a bad fall would develop a fear of heights, studies have shown the opposite pattern: a child who's hurt in a fall before the age of 9 is less likely as a teenage to have a fear of heights (Tierney, 2011).

By gradually exposing themselves to more and more dangers on the playground, children are using the same habituation techniques developed by therapists to help adults conquer phobias, according to Dr. Sandseter (Tierney, 2011). "Risky play mirrors effective cognitive behavioral therapy of anxiety," Tierney quoted Dr. Sandseter as saying (Tierney, 2011). We posit that our fear of children being harmed by mostly harmless injuries may result in more fearful children and increased levels of psychopathology (Tierney, 2011).

The old tall jungle gyms and slides disappeared from most American playgrounds across the country in recent decades because of parental concerns, federal guidelines, new safety standards set by manufacturers and the most frequently cited factor, the fear of lawsuits. Shorter equipment with enclosed platforms was introduced and the old pavement was replaced with rubber, wood chips or other materials designed for softer landings. These innovations undoubtedly prevented some injuries, but some experts question their overall value (Tierney, 2011).

Has Safety Stopped at the Playground?

With the hyper-focus on safety and preventing childhood injury comes another interesting phenomenon, the car seat. Every child should be safely secured in his car seat while being transported in a moving vehicle, as the seat was designed to be used

(Solomon, 2006). The problem is that the car seat now “subs” as the “infant purse,” for lack of better terminology. Parents, fearing falls from less secure devices such as shopping carts, or germs from these community based carts, tend to keep their babies and young children secure in their infant carriers. The small child is snapped into the back seat and carted into the grocery store where his seat is snapped into the buggy. The seat is then secured in the car and then snapped into the stroller for a walk through the mall. Soon the developing child has been in his seat for hours with no break. They are toted into restaurants and sat on tables. They are sat in car seats to be fed. They are strapped into their car seats while mom takes a shower. The uses of the car seat are endless. Many parents think this is harmless.

Catherine McKenzie reports that infants and young children are now being “carted” place to place in their car seats. No longer just safety devices for automobiles, portable car seats are now an important part of “travel systems.” Sets now include an in-car base, a stroller, and a car seat that snaps into both. They have been called the SUV’s of the stroller world, and a quick glance in any baby store will show you how popular they’ve become (McKenzie, 2011).

Infant seats, whether sold as part of a travel system or alone, now sometimes include a cold-weather boot, a head hugger, and a car base. Most can be used only until the child reaches 20 pounds, which may be as early as three or four months. They often cost as much as longer-lasting, convertible car seats, which can be used in both rear-and front-facing positions and can accommodate children weighing from 5 to 40 pounds (McKenzie, 2011).

Many parents don't think twice about using an infant seat as an all-purpose baby carrier. But is there any harm in relying so heavily on a single piece of baby gear? Do the portability and convenience come at a price? As it turns out, there are good reasons why you should consider leaving the car seat in the car (McKenzie, 2011).

The Rise of Flat-head Syndrome

Medical professionals have begun to notice an alarming rise in the incidence of a skull deformity in infants called "flat-head syndrome." Plagiocephaly, the medical term for this flattening of the skull, can occur as a result of consistent pressure on a particular spot. It is a cosmetic condition, but one that can be permanent if left untreated.

The increase in plagiocephaly is frequently blamed on the fact that babies are now placed on their backs to sleep, a position that has been shown to prevent sudden infant death syndrome. If a baby's head is always in the same position, the pressure can deform the skull. However, back sleeping is not the only factor. Extended periods of time spent in a baby seat can also contribute to this condition, as can long periods in strollers, swings, and other devices that put babies in a back-lying position (McKenzie, 2011).

Concern over plagiocephaly also led the American Academy of Pediatrics to suggest in 2003 that infants "should spend minimal time in car seats (when not a passenger in a vehicle) or other seating that maintains supine positioning." (McKenzie) Plagiocephaly is not the only problem associated with heavy use of car seats. According to Dr. Jeanne Ohn, executive coordinator of the International Chiropractic Pediatric

Association, many infants tilt their heads to one side or the other, leading to further spinal stress (McKenzie, 2011).

Lack of Touch

McKenzie reports a personal observation, stating:

Friends of ours came over for dinner with their six-week-old son. He had been sleeping in the car, so they left him in the car seat and set it down near the dining table. When he woke up, they amused him by rocking the seat and dangling toys in front of him. We decided to go out after dinner, so they clipped the seat into their compatible stroller, and we went for a walk. Finally, when it was time to go home, they put the seat back in the car and drove away. Their son had spent the entire three hours of their visit in his seat. (McKenzie, 2011)

Spending excessive amounts of time in an infant seat deprives a baby of touch and stimulation. Car seats are very good at doing what they are supposed to do, protecting children in the event of an automobile accident. There is no evidence to suggest that staying in a seat after the ride is over offers a child any benefit, however. One study from Columbia University researchers gave either a baby seat or a soft, wearable infant carrier to mothers of low socio-economic status who had recently given birth. After 13 months, the researchers found that the babies who had been transported in wearable carriers were significantly more likely to demonstrate a strong attachment to their mothers (McKenzie, 2011).

Other Delays Noted

In pediatric practice, an Occupational Therapist encounters many concerns with the overuse of the car seat or any device that has the child positioned in a semi-reclined position over time. As therapists, we worry about the positioning of the eyes, as the eyes are positioned to look at the ceiling and avoid direct eye contact with other individuals. The head is supported, as are the shoulders and trunk. This position does not encourage the hands to come together for fine motor development. Back and belly muscles do not have to work to hold the child up. The child does not get direct eye contact with other individuals and is often calmed by rocking the car seat. Parents may argue that my baby/young child is safe. The baby is safe, it is secured in a semi-reclined position, and he cannot get up or fall out. But what are we doing to this developing child? We are preventing eye contact, we are calming by rocking, and we are supporting the entire body!

Fast Forward the Tape

Our infant/young child who spent his first 6-8 months in an infant carrier and car seat avoiding eye contact, being rocked to be calmed, toys dangled above him, is now out of his seat and it's his first day of pre-school. Guess who's rocking, looking at the ceiling and swinging toys above his head. Those early learned calming behaviors are displayed in times of stress and the child is at risk of being labeled with symptoms that mimic autism. This is a pretty hefty price for the child to pay.

Chapter 5

An Emerging Awareness of a Need to Change

Health Day News reported that, “Even when they’re playing outside, children tend not to be physically active at pre-school” (McKeever, 2011). According to the Centers for Disease Control and Prevention (CDC), during the past 20 years there has been a dramatic increase in obesity in the United States and the rates remain high. Approximately 17% or 12.5 million children and adolescents aged 2 through 19 years are obese. In 2010, no state had a prevalence of obesity less than 20% (CDC, 2010).

The *American Medical News* reported on April 29, 2011, that the video game “Grand Theft Auto 4” went on sale. According to Reuters News Service, the launch was expected to be “the biggest entertainment event of the year, with first-week sales forecast to be up to \$400 million, beating those of last year’s ‘Halo 3’ from Microsoft.” The game, as Reuters explains, “casts a player as an Eastern European immigrant who runs drugs, shoots cops and beats up prostitutes after falling in with a crime syndicate” (Davis, 2009).

In a study of 872 children (grades one to three) living in Switzerland, published in the June 2004 issue of *Obesity Research*, researchers reported that the use of electronic games and television viewing were independently associated with obesity. There was nearly a 200% increased risk for obesity per hour per day for these children who played electronic games (Davis, 2009).

Taking Notice of Other Injuries

Dr. Ronald M. Davis, President of the AMA, reports several of the adverse effects of the overuse of video games. Dr. Davis presented evidence that video game use is associated with epileptic seizures, upper-extremity musculo-skeletal disorders and increased metabolic rate. With respect to behavioral effects, Dr. Davis reveals that several small studies suggest an association between playing violent video games and having aggressive thoughts and behaviors. According to the AMA's Council, the preponderance of research shows that exposure to violent media increases aggressive cognition, affect and behavior, and decreases pre-social behavior in the short term (Davis, 2008).

Brian Ferrie, a senior associate editor for *ADVANCE for Occupational Therapy Practitioners*, states he has received multiple reports from therapists regarding chronic hand pain/injury to young children's hands due to overuse of video controls or a computer mouse. Mr. Ferrie reported on a 2 ½ year old child suffering from muscle spasms of the hand of unknown origin. The boy's mother stated that he was being tested for neurologic problems, but nothing neurologically wrong had been found with him. It had been deduced there was possibly something else going on and the doctor inquired about what kind of activities he completed. The mom admitted that her 2 ½ year old spent up to 4 hours per day playing on the computer using a mouse. The child was diagnosed with focal hand dystonias, a muscle spasm that develops when practicing a task in the same position for a long period of time.

Kids Spend Nearly 55 Hours a Week with Electronics

Kids are putting in serious hours, before and after school, while doing homework with electronic devices, instead of going outside to play. They're watching television more than 28 hours every week. That's according to the latest data from the Nielson Company (Shapley, 2011). The new numbers represent yet another increase in media consumption. If you add in all media - video game, cell phone, and computer usage - today's kids are working the equivalent of a full-time job. They are spending an average of 7 hours and 38 minutes every day consuming media, according to a new survey by the Kaiser Family Foundation (Shapley, 2011). Some of these numbers are related to kids "media multi-tasking." The TV is left on during dinner in most US homes, and the MP3 player stays plugged into ears during homework (Shapley, 2011).

According to Education.com, American student performance is slipping again while China is number one (Education, 2010). In speaking to the Associated Press, Education Secretary Arne Duncan didn't mince words, stating that the results are "an absolute wake-up call for America." He added "We have to deal with the brutal truth, we have to get much more serious about investing in education" (Education, 2010).

One has to consider seriously if we as a society have looked at the global picture of the evolution of play and the effects it has had on the child. Students need to put the electronics down and get involved in play activities.

Looking Back on What Hasn't Changed: the Development of the Child

The newborn baby comes into the world looking more like a wrinkled old person than a Gerber baby. The head appears larger than the body and the baby has little control

over the head (Case-Smith, 1996). By the second month of life, the baby is turning his head side to side and by the fourth month he should have head control.

During the third and fourth month, when placed on his tummy, the baby should be able to weight shift to his forearms, resulting in shoulder collapse. This will be mastered soon. At five to six months the baby will be able to bear weight on extended arms. He has also learned to roll over. The baby is bringing hands to mouth, as well as feet to mouth, and is reaching for toys with one or both hands (Case-Smith, 1996).

As the baby passes the six month mark, he becomes more mobile as he learns to go from lying on the floor to sitting, from lying to hands and knees. These are important developmental times for the child. As he explores the world and moves about, he is developing specific components of his body (Case-Smith, 1996).

As he lies on the floor and pushes himself up, he is working the muscles of his back and shoulders, creating stability in his shoulders. He is defining the arches of his back. He is gaining head control. He is training his eyes to scan his environment. He is building physical endurance (Case-Smith, 1996).

At seven months the child begins to learn how to crawl, first by creeping, then by reciprocal motion. This reciprocal limb motion requires coordination of two sides of the body, good shoulder and pelvic stability, and control of trunk rotation. This skill acquisition influences the ability to stand and eventually walk, which is next in the line of progression of skills (Case-Smith, 1996).

As eight months approaches, the baby is beginning to pull himself into standing position and is soon cruising around furniture. Between ten and fourteen months the child takes his first independent steps and soon he is walking on his own (Case-Smith, 1996).

The Car Seat

A baby who is toted off in the car seat for hours on end is at great risk of having his normal development interrupted. In a car seat the head is being continuously supported in a semi-reclined position; little opportunity is given to exercise those developing neck muscles that support the head. Due to the lack of head control, the head is not able to stay at midline, and in some cases children have developed cervical dystonia or Torticollis, a painful condition in which the neck muscles contract involuntarily. The infant head has leaned to one side for extended periods of time, causing muscle shorting on one side of the neck. Often these children are referred to Occupational Therapy for extensive neck stretching and positioning to correct this condition.

Children who are in the car seat in this semi-reclined position have little opportunity for belly time. These kids are missing out on early muscle development. They are not developing the aches in their backs. They are not developing their shoulder girdles, nor are they developing the arches in their hands. These critical developmental milestones occur in infancy by putting our body weight through our upper bodies. Once a child passes through that developmental sequence it is very difficult to make up for it. If a child is secured in his car seat, he is not getting the exposure to those activities. This lack

of development will become obvious during his pre-school years. They display immature grip patterns for handwriting and coloring. They have difficulty sitting unsupported or sitting at their desks.

A subtle social cue that is coming to light with extended use of the car seat is that young children avoid direct eye contact. In the semi-reclined position the child's eyes are directed towards the ceiling, they gaze past the adult eye. According to Catherine Schneider, OTR and author of *Sensory Secrets*, our children are suffering, not prospering, because of the brushing aside of these all important foundational skills (Schneider 2001).

Back and belly muscles are supported and held in position by gravity in the car seat. This leaves little opportunity for muscle development and does not tax the respiratory system.

An Activity Analysis: Going to the Grocery Store in the Car Seat

A young child is safely clipped into his car seat in a 3-point restraint, shoulder straps hold the chest back, and the head is completely supported. The child's eyes are aimed toward the ceiling and the sides of the car seat block peripheral vision. The car seat is clipped into the front of the cart and the child is forty-plus inches off the ground with vision blocked on either side. Interaction with any human is limited unless they are pushing the cart. It is highly unlikely that that another individual will approach your personal space. There is little interaction in the store other than the smells and sounds of the store.

An Activity Analysis: Going to the Grocery Store in Mom's Arms

A young child is carried into the grocery store in his mother's arms. He must maintain head control. He feels the warmth of his mother. His back and belly muscles are firing to keep his trunk in proper alignment. He is at eye level with other individuals shopping in the store. Other store patrons smile, some may talk. He sees the colors of the store. He associates the sounds with actions. He may get a cookie at the bakery. He uses his balance system to hold himself upright in his mother's arms. He turns side to side to scan the environment. He may reach for items that he likes. He may get to hold something he likes. He's an active participant in the experience. He is able to use his body, using all of his sensory systems, working his emotional and physical development. The only difference is that the car seat was left in the car.

Where to Now?

Researchers found that 89 percent of so-called physical activity by 3 to 5 year olds at community-based pre-school programs was sedentary. The study also found children received little encouragement from their teachers to be physically active (McKeever, 2009). These children were often found just standing around outdoors and were unable to engage in unstructured self-directed play. "The low levels of children's activity and the lack of adult encouragement point to a need for teacher to organize, model and encourage physical activity," lead author William H. Brown, an education professor at the University of South Carolina, said in a news release issued by the journal's publisher. "Because children's health and physical well-being are an important

part of development, their physical activity needs to be increased in order to promote healthy lifestyles, particularly for pre-schoolers who are growing up in low-income families and who are at greater risk of poor health outcomes” (McKeever, 2009).

Sedentary Children

Kids who aren't getting enough physical activity are at risk of obesity, as stated earlier, but also lack physical endurance to participate in their daily activities. These kids present marked physical differences. They have poor scapular stability, their shoulders are rounded forward and their heads protrude forward. Their rib cage presses down on their diaphragm and their vital capacity has never been stressed to withstand sustained physical activity. Their muscles have not been conditioned and they fatigue quickly. These kids tend to want to sit in chairs with backs for support, or lean over their desk tops. These kids gravitate to sedentary activities such as their video games.

One School Making a Difference

United Local Schools in Columbiana County is making a difference. Mr. Ridgeway, the principle of the elementary school in Hanoverton, Ohio, observed children restlessly sitting on the gym floor after the bus had let them off in the mornings. He noticed increased frustration in his teachers who had bus duty. They had difficulty keeping students' quiet and sitting on a line. There was no real reason why students needed to sit on a line, so he decided to have the students walk around after they arrived at school. The students hung their coats up, put their book bags away and returned to the

gym to walk until the bell dismissed them. At first, Mr. Ridgeway thought he was simply occupying their time until class. The students embraced this walking program. They got to talk to their friends and move around. Soon there were subtle changes in Mr. Ridgeway's school. There were fewer trips to the principal's office for behaviors problems. There were fewer absences. Mr. Ridgeway saw an improvement in test scores. Teachers didn't mind bus duty as they were able to walk in the mornings as well. The program became a morale booster. The added benefit was that the program did not cost the school system anything. Mr. Ridgeway was simply thinking outside of the box and providing an opportunity to engage students.

The T.O.P.S. Program

Early scripting can result in learned behaviors. Maladaptive scripting results in maladaptive behaviors (Case-Smith, 1996). A child learns by repetition. If a child learns to be calmed by rocking in an inanimate object such as a car seat, take him out of the car seat and when he's upset he will rock back-and-forth. It's what he has been trained to do. It feels good, it's what he has been taught to calm down. Behaviors over time become habits, habits become our routines, and our routines are part of our daily roles (Case-Smith, 1996).

A child learns from a very young age to be calmed by rocking back and forth in a car seat, his eye contact is directed towards the ceiling, physical touch is limited, and toys are dangled from overhead. This in some cases, especially in families with underlying

genetic factors, can establish routines that make the child appear to be autistic or have symptoms of pervasive developmental disorders.

T.O.P.S. – Therapy, occupational, physical, and speech - incorporates all three disciplines in a small group setting at one time, working in developmental sequences based on imaginary play. This program has come to life in Youngstown, Ohio, under the nurture and guidance of Kathy Swoboda, OTR/L, and Sarah Bowser, SLP.

The program is set up on one theme song, “Down on Grandpa’s Farm.” All the imaginary characters come from the song. Grandpa, who is a stick figure built of PVC pipe wearing overalls, is there to teach us body awareness. The white chicken, brown cow and spotted goat all live on the farm and help with beginning sounds for speech. There is only one way to get to the farm, you have to have a decorated 2-liter bottle filled with varying amounts of water (weight you get depends on how big you are) and you shake your bottle as you march, jump, stand on one foot, and sometimes gallop down to grandpa’s farm. He lives in imagination.

Grandpa has a friend, “the letter lady,” who shops at Giant Eagle. Nobody has ever seen her before. She spends her days at the grocery store and is always crashing into people’s buggies, with a “Crash Boom Bang!” Letters go flying everywhere, but wouldn’t you know it, somebody’s special letter is always found. A special letter is always the first letter of your name. The letter lady has specific instructions on how to write your letters, which always start at the top. The bi-weekly handwriting session starts with writing your letter in the air using a cheerleading “pom-pom,” but of course they are never “pom-poms” at the farm, they are “shakers.” Then it’s down on our knees for our

letter song. Here we learn where top, middle and bottom are while in tall kneeling working on our core muscles.

K-C the dog is always in trouble: He digs so many holes in the road. We get to play “swamp patties” with K-C by throwing them at him. Grandpa gets a little upset with all the holes in the road: you can only drive the big red truck 27 miles an hour down the road. You have to walk up the hill (the 1-by-6 inch wedge) to the swamp (the portable trampoline), and the swamp is hard to stand on. It sure is wobbly, but you have to get your balance, bend down, and throw swamp patties at K-C. He is 6 feet away, with his paws in a laundry basket waiting to catch his favorite treat. Afterward, we get our spots (plastic shapes used to teach personal space) and bottles to exercise our arms to K-C’s song, “There’s a dog in the School.” Students learn the concepts of “in and out” as we move our 2-liter bottles in and out through space, strengthening our shoulder girdle.

The session turns to other adventures because somebody (imaginary friend) is always missing and we must cross the river (walk over the balance beam), crawl through the tunnel, walk over stepping stones as the carpet quickly becomes a moat, and one must walk up and down hills (therapy wedges). Each step tests the child’s balance and gross motor coordination.

The kids might lie down on their bellies with K-C as he wants to write and color over simple shapes. K-C usually ends up in time out and the kid’s transition to the table for a story and some serious handwriting practice.

The session ends with clapping and singing the “Bye-Bye” song, and then the next group rolls in. The three disciplines blend together as the big kids (therapists) in the

group. Each monitors his area of expertise as he leads the child forward in old-fashioned imaginary play and advances them through developmentally-appropriate steps.

Success in the program has included children feeding themselves, learning how to walk, age-appropriate handwriting skills, gross motor skills and approved attention to task.

Parent response has been overwhelming. Initially parents find the program sort of a comedy, then there is a fear that the imaginary component will teach the child to lie. This fear requires appropriate parent education, as many of these parents grew up with video games and electronic devices. Often, when returning the child to the observation room, cell phones are out and parents are texting or playing games on their cell phones. As young parents begin to understand the process and see the results of the therapy, they begin to invest in the process and often changes are made in the home.

Chapter 6

Implications

Lifelong Effects of Childhood Obesity

Doctor, firefighter, astronaut, these are the things kids want to be when they grow up. Obese 35-year-old with type 2 diabetes and coronary heart disease? Not exactly. According to two studies published in the *New England Journal of Medicine* (NEJM), however, that's where our children are headed unless monumental and immediate changes are made to curb childhood obesity (Sharples, 2007).

Those efforts are already overdue, according to the findings of Bibbins-Domingo's report. Extrapolating from childhood obesity rates from 2000, she and colleagues at San Francisco General Hospital and Columbia University estimate that by 2020, as many as 44% of American woman and 37% of men will be obese by age 35 and, therefore, ill. "By 2020, we found, not unexpectedly, that the prevalence of heart disease will rise by as much as 16% and heart disease deaths by as much as 19% between the ages of 35 and 50 years," says Bibbins-Domingo (Sharples, 2007). Estimating conservatively, that figure translates to about 100,000 additional heart disease deaths among 35 to 50 year-olds solely due to obesity. Realistically, says Bibbins-Domingo, the number is probably closer to 300,000 (Sharples, 2007).

The second, larger study in the NEJM came to similar conclusions. By comparing the childhood medical records and adulthood hospital records of 276,835 Danish citizens

born between 1930 and 1976, researchers found a distinct correlation between higher childhood body mass index (BMI), the ratio between height and weight that is the standard for defining obesity, and a greater risk for future heart disease and heart-disease-related-death. According to the authors, it is the first study to link excess weight in childhood and health problems later on conclusively. What's more, the data showed that the correlation is linear and progressive; as kids' BMI increased their risk of adult heart disease. "We anticipated finding a threshold, or a cut point at which the risk dramatically increased or remained stable, so when it worked out to be such a proportional increase we were very surprised," says co-author Dr. Jennifer Baker of the Center for Health and Society at the Institute of Preventive Medicine in Copenhagen. "The association we found is very straightforward, the higher a child's BMI in childhood from the ages of 7 to 13, the greater the risk of heart disease in adulthood. They increase in proportion to each other" (Sharples, 2007).

The risk increased not only with weight but also with age. At seven, a girl of average height and weight (about 4 foot, 52 pounds) had a 4.6% chance of developing coronary heart disease in adulthood. The risk for that same girl, 10 pounds heavier, jumped to 4.8%. At age 13, a healthy girl (5 foot 2 inches, 101 pounds) had a 4.6% chance of developing heart disease as an adult, but at a higher BMI, the equivalent of adding about 28 pounds, her risk of heart disease spiked to 5.7%. That amounts to an overall 24% higher risk of developing the disease (Sharples, 2007).

In boys, the study found, the risks were even greater. At age seven, a healthy boy (about 4 foot, 52 pounds) had an 11.7% chance of later developing heart disease, with 8.6

pounds of additional padding, that risk jumped to 12.9%. At age 13 heavy boys, those with 24.7 pounds of extra weight, showed a whopping 33% increased risk of developed coronary disease over their slimmer peers (Sharples, 2007).

By United States standards, where some nine million children are overweight, this can be a serious health risk. “If we could intervene in that period to help these children attain and maintain an appropriate weight for their age, we really could significantly reduce the risk of heart disease in the future,” says Baker (Sharples, 2007).

Health Effects of a Sedentary Lifestyle

A sedentary lifestyle is a way of living in which a person does not engage in sufficient physical activity for what is generally considered healthy living. It is marked by prolonged periods of sitting, whether it is around the TV or the computer screen or anything else. People living a sedentary lifestyle overlook physical activity and are involved in activities that rarely require any amount of physical stress.

As discussed earlier obesity and heart disease are risk factors in sedentary lifestyles. Heart disease resulting from a lack of physical activity can increase the risk of dying by 52% in men and 28% in women (Cherian, 2010).

Sedentary lifestyles can lead to an increased risk of diabetes. Regular exercise helps in regulating the blood glucose levels. According to studies conducted by researchers at Duke University Medical Center, intensive exercise can significantly improve the body’s ability to control blood sugar levels. The lack of exercise results in

increased blood sugar levels putting excess stress on your pancreas (which secretes the hormone insulin). This increases your chances of getting type 2 diabetes (Cherian, 2010).

Decreased activity increases the risk of developing certain types of cancers such as breast cancer, colon cancer, and other types of malignant tumors. According to a study carried out by the University of Hong Kong, physical inactivity can increase the risk of dying from cancer by 45% in men and 28% in women (Cherian, 2010).

The prolonged inactivity causes your bones to lose their strength as they are no longer challenged to support your body structure. Arthritis and osteoporosis, which cause the bones to become brittle and weak, can be brought on through an inactive lifestyle (Cherian, 2010).

Your muscles are like car batteries. They need to run on a regular basis to make sure that the car is working. The more sedentary lifestyle you have, the lesser muscle you are likely to possess. The fewer muscles you possess, the less your ability to carry out your day-to-day tasks. A sedentary lifestyle doesn't put any physical pressure on the body. Thus, the body doesn't feel like taking a rest, which leads to sleeping difficulties and, in severe cases, can lead to insomnia. Researchers have also found that people who don't exercise have a 14% chance of developing non-migraine headaches (Cherian, 2010).

Finally, individuals who engage in a sedentary lifestyle tend to age faster. Telomeres are repeat sequences of DNA that sit on the ends of chromosomes, protecting them from damage. As we age the telomeres get shorter, and their deterioration is associated with the physical signs of middle and old age. Research indicates that in

inactive people the telomeres shortened more quickly than in active people. The faster the rate of shortening, the faster your aging process, the higher the mortality rate (Cherian, 2010).

How Do We Change?

According to the President's Challenge, it's hard to meet your physical activity goals if you're spending too much time in front of the television or computer. Sadly, the average kid spends more time watching TV than running and playing (www.presidentschallenge.org).

The human body was designed for activity. The President reminds children that by exercising regularly and making smart food choices, they will look and feel better every day. Fitness is about improving muscular strength and endurance, cardiorespiratory strength and endurance, and flexibility through regular physical activity. The President encourages kids to fuel their bodies with proper foods and to stay active. He points to the advantages of a healthy heart, strong bones, a sense of well-being, and looking and feeling better (www.presidentschallenge.org).

The President sets a goal for kids between 6 and 17 years of age to be active 60 minutes a day at least 5 days a week for 6 out of 8 weeks. As an alternative, kids can count daily activity steps using a pedometer, with a girl's goal of 11,000 steps and a boy's goal of 13,000 steps. Children are encouraged to sign-up on the PALA website and enroll to receive the President's Active Lifestyle Award (www.presidentschallenge.org)

NFL Launches NFL Play 60

Players across the NFL are banding together to help kids get moving with a new national youth health and fitness campaign designed to tackle childhood obesity (www.nfl.com). NFL Play 60 brings the NFL's long-standing commitment to health and fitness together with an impressive roster of partner organizations that include Action for Healthy Kids, the Ad Council, the American Heart Association, the National Dairy Council, Nickelodeon, the United Way and the US Department of Health and Human Services. In addition to the online programs, Play 60 will also be implemented locally as part of the NFL's in-school, after-school and team-based programs, from youth football to "What Moves U" (www.nfl.com).

The players involved include an impressive list of athlete celebrity stars. More than 25 teams helped to build Youth Fitness Zones in their communities, providing new places for local kids to be active. These fitness zone projects were part of the NFL's annual Hometown Huddle, a league-wide day of service in partnership with the United Way. "We're taking a leadership role in the movement to get youngsters fit. Our players know the importance of staying healthy and it's important that young fans also understand the value of exercise," said Commissioner Roger Goodell. "Play 60 is important tools in ensuring children get their necessary daily physical activity as recommended by health and fitness experts." (Goodell)

As we awaken to the overweight sedentary child who sits on the couch texting, listening to his MP3 player and playing video games, we begin to realize that something

has gone wrong. Maybe the older children are lost since change is in their hands. Maybe change will come in the form of a new game, the Wii Fit video games.

A recent study release by *ADVANCE OT Magazine* noted that playing two Wii Fit video games, Step and Hula, can provide adequate exercise to improve health and physical fitness in adult women, according to Robert R. Kraemer, Ed.D., FACSM, of Southeastern Louisiana University, Hammond. The researchers emphasize that players “should strive to participate at higher (intermediate) game levels” to gain exercise benefits, however.

Healthy young women were studied while playing Wii Fit games, Step, a step aerobic workout, and Hula, a simulated hula-hoop game. Oxygen consumption, energy expenditure, and other measures of the body’s responses to exercise were assessed as players advanced through different levels of each game.

At the starting levels, neither game produced high levels of oxygen consumption or perceived exercise intensity. As the women advanced to the intermediate levels, however, the exercise intensity increased. In both the Step and Hula games, the intermediate level produced energy expenditure equivalent to a fairly brisk walking pace of 3.5 miles per hour.

Of the two games, the Hula game provided higher oxygen consumption and energy expenditure. “This could be attributed to the fact that the Hula involves more total body movement exercise than Step and uses more muscles groups,” Ms. Worley and coauthors write. At the intermediate level of the Hula game, players could burn approximately five calories per minute.

Conclusion

It seems that in the rush to give children every advantage, to protect them, to stimulate them, to enrich them, our culture has unwittingly compromised one of the activities that help them the most. We have taken their play time away and created an elaborate “Broadway show” in which they are mere passive participants. A push of a button here a push of a button there as they recline comfortably in their bean bag chair, sipping on a juice box, munching on chicken nuggets, texting on their Android with no face to face contact, as their MP3 player blasts the latest tunes in their ears all in the name of “play”. There sits our next teacher, scientist, doctor or lawyer.

An awareness is developing. We as a society are beginning to take notice that something is missing. There are reports of physical illness and disease from the Centers of Disease Control. Childhood obesity is on the rise. Asthma is on the rise. Random fingers are pointing, but they just don’t know where to point. Whispers come from professional sports teams to eat healthy and move more. But still the dots are not being connected.

The few dinosaurs that know how to play are planning their retirement. The young brood coming in to take our place are products of the 70’s and 80’s and were raised in an electronic era, most likely napped in their car seats and never climbed to the top of a 14 foot sliding board.

I imagine there will be majors in play strategies and probably a future family counseling degree in parenting awareness. Maybe there will be Olympic Games such as tree climbing and hop-scotch. I also realize until we can do data analysis on the value of

play interaction that it will be pushed to the side and found as unimportant as cursive handwriting is to the third grade teacher, but then again I bet they don't understand the development of the shoulder!

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