



## **Nature Prescriptions (NatureRx) Pilot Project Report**

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### **Project Summary**

Health care providers have a unique opportunity and authority to educate patients and to influence their health-related behavior. As part of a pilot project, "NatureRx", a pediatrician and a pediatric nurse practitioner in San Diego County, California were educated by the project coordinator (Jennifer Douglas) about the health benefits of spending time in nature. During "well-child" visits, the providers initiated the intervention, briefly speaking to parents and children about those health benefits and giving them a NatureRx prescription form. The form listed several health benefits of nature and prescribed three actions: (1) play outdoors daily; (2) within a month, visit the Mission Trails Regional Park (MTRP) and/or the San Diego Botanic Garden (SDBG); and (3) limit screen time to 1-2 hours a day. Both providers reported very positive qualitative responses from families regarding their intention to adhere to the prescription's directives. However, it is unclear how many families actually followed those directives, and a better tracking mechanism is needed. Presentations about NatureRx and the overall topic of the benefits to children's health of spending time in nature continue.

### **Background**

We are beginning to learn that children are happier, healthier and smarter when they spend time in nature and outdoor play—whether in the schoolyard, nearby open space, wilderness, or backyard. According to author Richard Louv, unstructured outdoor activities improve children's health by increasing physical activity, reducing stress, and serving as a support mechanism for attention disorders. Kids develop motor skills and fitness, follow their curiosity and creativity, gain a sense of place, and learn about stewardship of the environment and their community. Louv wrote that time spent outdoors in unstructured play can build skills related to creative thinking, problem-solving and leadership.

The American Academy of Pediatrics issued a statement in 2006 supporting the importance of play in enhancing childhood development and has developed a prescription incorporating advice to play outdoors, limit screen time, and eat healthfully. Children who spent time outdoors on a



daily basis were noted to have less stress and improved self worth (Wells and Evans, 2003). In a study by Taylor et al (2001) children who had contact with nature had improved attentiveness as evidenced by parents' self report. In general, physical activity, whether indoors or outdoors, assists with the maintenance of a healthy weight and managing obesity in adults and children. Reducing time spent in front of a screen (TV, computer, video games, etc.) allows more time for healthy behaviors such as outdoor play. The prevalence of overweight was demonstrated to be up to 40% lower among children who spent time outdoors. (Cleland et al, 2008).

## **Project Goals**

The project sought to increase the awareness of participating health care providers and patient families about the health benefits of spending time in outdoor natural environments and to increase interest in that behavior among families. The project tested a simple method of tracking patient visits to the prescribed nature centers. The long-term goal of such efforts is for providers to "prescribe nature" as part of a regular routine of encouraging healthy behaviors, and ultimately to increase the amount of time children spend in nature, with the accompanying physical activity and health benefits.

## **Methods**

Jennifer Douglas served as project coordinator and recruited, Dr. Teresa Hardisty, a pediatrician in a large medical group/health system (Sharp Rees-Stealy Medical Center in La Mesa, CA) and Laura Wheeler, a pediatric nurse practitioner at an independent pediatric office (La Jolla Pediatrics in San Diego, CA). Each provider completed the intervention during "well-child" office visits with 50 patient families, with children ages 2 to 16, in November and December, 2011.

The project coordinator recruited two nature centers to participate. Mission Trails Regional Park (MTRP) is located within the city limits of San Diego, and is one of the largest urban parks in the nation with open space, hiking/biking trails and a visitor center containing nature exhibits, art, classrooms, library, and theatre. The park is open daily and entrance/parking is free, as are regular naturalist-led nature walks and activities, some directed toward families. The San Diego Botanic Garden (SDBG, formerly Quail Botanic Gardens) in Encinitas, California (northern San Diego county) is open daily and charges \$6-12 entrance fee (children 0-2 free), and \$2 for parking (free with 4 or more passengers). It conserves plant species from around the world and offers four miles of trails on 37 acres, the interactive Hamilton Children's Garden, and the Seeds of Wonder children's garden. It was expected that Wheeler's patients would visit SDBG and Dr. Hardisty's patients would visit MTRP, due to the distance that families would drive from neighborhoods (near the pediatric offices) to those respective nature centers. Both locations are accessible by car but not easily via public transportation.

The project coordinator researched existing nature/healthy behavior prescriptions from the American Academy of Pediatrics, National Environmental Education Foundation (NEEF) and others. Based upon those forms and the requirements of the current project, created a unique NatureRx prescription form and emailed the form as a letter-size PDF to the providers. The NatureRx form (Figure 1) listed several health benefits of nature and prescribed three actions: (1) play outdoors daily; (2) within a month, visit MTRP and/or SDBG; and (3) limit screen time to 1-2 hours a day. The providers copied the prescriptions in their own offices.



Figure 1: Text of NatureRx given to parents.

## Nature Rx: Nature Play Prescription & Nature Coupons

Studies show that kids are actually healthier, happier and smarter when playing in nature. Spending time in nature lowers stress and builds independence, creativity, concentration and problem-solving abilities. Exercise helps maintain a healthy weight and body. The great outdoors brings families together for little or no cost.

**Provider: Laura Wheeler, Pediatric Nurse Practitioner, La Jolla Pediatrics**

Patient Name \_\_\_\_\_ Date: \_\_\_\_\_

- KIDS – Go outside and play each day!** Find nearby nature in your yard, neighborhood park, or canyon.
- With your children, visit 1 or 2 locations below and submit coupon. HAVE FUN!**  
What to do: Explore, hike, climb, listen for birds, watch clouds, find rocks and plants, dig in the dirt.

Mission Trails Regional Park Visitor Center; 619-668-3281, [www.MTRP.org](http://www.MTRP.org); 1 Father Junipero Serra Trail, San Diego 92119 (San Carlos area). Take the I-15 to Mission Gorge Rd, go east; Open daily 9-5 p.m., Closed Thanksgiving and Christmas. Free guided walks 9:30 a.m., Wed., Sat., Sun.; Free Family Discovery Walk, Sunday/November. 13, 2 -3:30 p.m. led by NatureRx Coordinator Jennifer Douglas, MTRP trail guide.

San Diego Botanic Garden including Hamilton Children's Garden and Seeds of Wonder Children's Garden; 760-436-3036, [www.SDBGarden.org](http://www.SDBGarden.org); 230 Quail Gardens Drive, Encinitas, CA 92024; Take the I-5 to Encinitas Blvd., go east, then left on Quail Gardens Dr., Open daily 9-5 p.m., Closed Christmas. Special kids activities Fri./Sat., 11 a.m.-1:30 p.m. Free family pass/free parking with coupon below (estimated value for family of 4: \$36).

- Limit screen time** to 1-2 hours daily (TV, computer, video games, mobile phone, etc.).

Provider Signature \_\_\_\_\_

More information is available at **San Diego Children and Nature Collaborative**, [www.sdchildrenandnature.org](http://www.sdchildrenandnature.org) and **Children & Nature Network**, [www.childrenandnature.org](http://www.childrenandnature.org)

-----COUPON #1 – CUT HERE-----

### **Coupon #1 (from Laura Wheeler, La Jolla Pediatrics) – Mission Trails Regional Park**

Put coupon in the NatureRx box at Mission Trails Regional Park. Deadline 12/31/11.

\_\_\_\_\_ Parent first/last name and patient (child's) name

-----COUPON #2 – CUT HERE-----

### **Coupon #2 (from Laura Wheeler, La Jolla Pediatrics) – San Diego Botanic Garden**

Present coupon at the San Diego Botanic Garden for a free family day pass and \$10 off an annual family membership. Deadline 12/31/11. Day pass good for 2 adults and up to 4 children in your household.

\_\_\_\_\_ Parent first/last name and patient (child's) name



In order to track visits to the specified nature locations, patients (families) were instructed to submissions the bottom “coupon” portion of the NatureRx prescription form at MTRP and SDBG. At MTRP, a ranger devised a special box for patients to turn in the forms and placed it on the counter in the visitor center. At SDBG, patients presented the form at the entrance in order to gain free entrance.

A post-intervention four-question survey of the providers was conducted by the project coordinator, supplemented by phone calls. The following four questions were asked:

1. On a scale from 1-5 with 5 being the most positive, how would you rate the average response of patient families to NatureRx? (patients’ reaction when speaking to them about the health benefits of nature play, giving the NatureRx prescription form)?
2. How would you describe patient family responses? Please describe at least one positive and one negative or neutral response and include perceived barriers.
3. What is your best estimate of the percentage of families that will visit \*\*\*nature at least once due to NatureRx? (\*\*either to a nature location listed on the prescription or another nature location).
4. How could NatureRx be improved, assuming a very low-budget? (so more families are informed about the health benefits of nature play and/or so more families actually visit nature/engage in nature play regularly)

## Results

Both providers stated that patient families generally responded very favorably to the intervention with no negative responses and possibly a few neutral ones. Wheeler estimated response at 5 out of 5 (with 5 being the most positive) and Hardisty at 4-5. The providers said the intervention was easy to undertake in their own busy pediatric offices. Wheeler made the following comment (in response to survey question #4; see Appendix A below): “We need to pinpoint safe places and how to get there on public transportation. It is important to know the demographics of the community. The work of the NatureRx needs to be minimal due to the diminishing time providers have with their families.” Hardisty said the project would be improved by the inclusion of small posters to post on exam room walls.

Out of 100 NatureRx prescriptions distributed, only two coupons were turned in (both at the San Diego Botanic Garden). In response to survey question #2, Wheeler estimated that 10% of her participating families visited one of the nature centers due to the NatureRx project and that most of her families “already went outside due to being a beach community.” It is possible that more families visited MTRP, but did not submit the coupon. They may not have been sufficiently aware of the request to submit the coupon, and there was no incentive there. It is also possible that families went to the botanic garden, but forgot the coupon, and then paid the entrance fee or decided not to enter. Visits to both locations could have been lower than at other times, as the intervention took place during the Thanksgiving and Christmas holiday period, when many families are busier than usual with holiday activities and vacations. The cooler fall/early weather may have been a factor, though San Diego climate remains mild during that time and amenable to visiting both locations. In conclusion, though a tracking mechanism was employed, its



reliability is thought to be low, therefore, it is not truly known how many families actually visited either location. Also, some patient families may have visited other nature locations, due to the NatureRx intervention.

On February 22, 2012, the project coordinator delivered a presentation about the health benefits of nature and the NatureRx project to the East County Building Better Health coalition, organized by the County of San Diego Department of Health. In addition, the project coordinator spoke to the member of the leadership council of the San Diego Childhood Obesity Initiative, Christine Wood, about NatureRx. Dr. Wood then incorporated NatureRx into her presentation at the initiative's Health Domain meeting in February, 2012. The project coordinator also attended that meeting and made comments about including the health value of nature experiences into the development of a health provider credentialing project focused on childhood obesity.

The project coordinator and/or the Nature Rx providers will make additional presentations within health care institutions, trade associations, or a similar audiences. Source material for these presentations include a presentation on "Open spaces, healthy places," by Raymond Baxter, Kaiser Permanente on May 12, 2011 at the Bay Area Open Space Conference, and a presentation by NEEF on their Children and Native Initiative (posted at [http://www.neefusa.org/assets/files/children\\_and\\_nature\\_training.ppt](http://www.neefusa.org/assets/files/children_and_nature_training.ppt)). Dr. Hardisty is planning a presentation before her pediatric department at Sharp Reese-Stealy. As president of the San Diego chapter of the National Association of Pediatric Nurse Practitioners, Wheeler plans to address the topic of children and nature at her organization's "Taming Pediatric Obesity" conference in April 2012. At the conference, Wheeler will highlight the NatureRx project and will use Richard Louv's groundbreaking books, *Last Child in the Woods: Saving Our Children from Nature Deficit-Disorder* and *The Nature Principle* for the conference's fund-raising effort (The project coordinator bought the books and arranged for Louv to sign them, with a personal message to the conference attendees).

## Limitations

The weak tracking system with no incentive to submit the coupon limited the ability to track patient visits to MTRP. A pre- and post- intervention survey of provider knowledge (about the research on health benefits of nature) was not done but could have measured existing and acquired knowledge of the subject, and aided the evaluation of this project. Lack of access to patient records (and the lack of a budget for that undertaking) did not allow contact with patients to gauge their knowledge, attitudes, and behaviors. In addition, the vast majority of San Diego's population uses a car for transportation, but it is possible that some patients' lack of money for gas or lack of access to cars, presented barriers to visiting the indicated nature centers.

At its inception, the project included the development of a 2-hour children and nature training for health care providers. However, upon interaction with the NatureRx participating providers, it became clear that a training of that length was not desired by or feasible for providers. Rather, a short presentation of 10-15 minutes is more realistic and designed for delivery during regularly scheduled provider meetings. With financial or other incentives for providers, a longer training could be devised. Without funding for such a project, the NatureRx content could become part of a certification/Continuing Medical Education program and remain a short presentation.

In a previous pilot project conducted by the project coordinator with a pediatrician in Oceanside,



California (County of San Diego), patient names and phone numbers were available to the project coordinator and reminder calls and/or text messages were made which seemed to increase turnout and enabled a post-intervention survey of families.

## Conclusions

Pediatric health providers can find a small amount of time to act as “nature-health” champions by giving patient families health information, encouragement, and specific nature places. As with the previous pilot in Oceanside, health providers could be asked to continue providing nature prescriptions. A “fact sheet” could be prepared for that purpose with health information and websites about local nature locations and events, facts about local flora and fauna, and local groups that bring families into nature. It is hoped that funding will be secured to offer a similar project with a stronger tracking mechanism, incentives, and access to pertinent information in patient records.

## References

Children and Nature Network. 2012. *Health Benefits to Children from Contact with the Outdoors and Nature*. [Includes citations for other research referenced in this report.] Available at <http://www.childrenandnature.org/downloads/C&NNHealthBenefits2012.pdf> , accessed 2/29/12

National Environmental Education Foundation. 2010. *Fact Sheet: Children’s Health and Nature*. [Includes citations for other research referenced in this report.] Available at <http://www.neefusa.org/assets/files/NIFactSheet.pdf> , accessed 2/29/12

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