
Canine Connection Therapy: Finding Purpose and Healing Through the Training of Service Dogs

14

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John navigating Times Square with Lundy, November 2014 (courtesy of Marshall Peters, SDI).

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14.1 History and Overview of the Therapeutic Service Dog Training Program Offered at Walter Reed National Military Medical Center

A pilot of the service dog training therapy program (SDTTP) model was launched in July 2008 at The Men's and Women's Trauma Recovery Program at the Veterans Administration (VA) Hospital in Menlo Park, CA. The SDTTP was conceived as a safe and effective complementary treatment to reduce the symptoms of posttraumatic stress disorder (PTSD). The perception of this program as an opportunity to reengage in a meaningful mission had a strong appeal to the powerful warrior ethos of this patient population. Over the next 2 years, this volunteer SDTTP proved to be highly popular and demonstrated a low dropout rate. In 2009, patient reports of reductions in their PTSD symptoms and clinical observations of the program's success were presented at the Veterans Administration National Mental Health Conference and the annual meeting of International Society for Traumatic Stress Studies. Approximately 200 service members participated in the pilot SDTTP program, five service dogs were placed with veterans in need, and two warrior trainers (WT) have become accredited service dog trainers currently pursuing careers in this field.

In 2009, the SDTTP was integrated into the Walter Reed's occupational therapy (OT) and recreational therapy (RT) programs. Clinicians at Walter Reed continued to observe reduction in patients' PTSD symptoms and patients reported improved wellness and high satisfaction with the program. The SDTTP, which is staffed by professional service dog trainers with clinical experience, is now also offered as an adjunct therapy for PTSD at the National Intrepid Center of Excellence (NICoE), WRNMMC, Ft Belvoir Community Hospital, the VA hospital in Menlo Park, CA, and NeuroRestorative's residential treatment program in Germantown, MD. Approximately 3000 active-duty service members and veterans have participated in the SDTTP since February 2009 [1].

The golden and labrador retrievers used in the program are bred for the health and temperament necessary for mobility service dogs. It takes approximately 2 years to mature and train a service dog. From day one, these purpose-bred dogs are gently handled and exposed to increasing social and sensory experiences bolstering their devotion and confidence in humans. Patients and their families participate in this fun and essential early socialization training. Around 3 months of age, the young dogs are ready to start the training program. Participants begin to teach the dogs

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basic commands and eventually work toward completing the list of 90 commands which each dog must be competent in to become qualified as skilled, certified, service dogs. The patients' participation in the SDTTP depends on their needs as well as the length and flexibility of their treatment program. Some WTs may work with the dogs for 2 weeks, while others are in the program for a year or more. This means that over 50 WTs can experience the psychological, physiological, and behavioral therapeutic value of the program during the course of training one service dog.

14.2 Case History/Presentation (John)

ID: 40-year-old male, married, white, AD/USN/E7 Chief Navy SEAL

John joined the Navy in 1992 (21 years service)

Current Military Status: Active Duty

Family History: John was married to his current wife in 2005 and together, they have five children.

John completed 11 deployments including Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF). He was exposed to multiple blasts during the deployments, including one in November 2010 when he sustained shrapnel wounds to his head. John began experiencing memory loss, loss of balance, and severe headaches. He did not seek medical attention until February 2012, after returning to the USA. John also experienced numerous significant emotional loss throughout his career, including but not limited to, losing 40+ friends who were killed in combat.

May 2011, John returned from deployment in Afghanistan to his home in Virginia Beach, VA. He had an extremely difficult time readjusting to normal family life. John continued experiencing constant headaches, loss of balance, increased irritability, speech difficulty, and episodes of memory loss. Combat-related dreams and daydreams, avoidance of social situations, hypervigilance, isolating himself from people, and increasing marital and family conflicts were a few of the challenges he was facing at that time.

14.2.1 Diagnosis and Treatment

May 2012, John was diagnosed and treated for traumatic brain injury (TBI) at NICoE located on the WRNMMC campus, where he received 6 weeks of intensive evidence-based and complementary, alternative medicine (CAM) treatments. His treatment continued over the next 15 months with therapies provided by both Portsmouth Naval Hospital Brain Trauma Outpatient Clinic and also the Richmond VA Inpatient Transitional Rehab Program. However, John's symptoms continued to worsen.

September 2013, John was transferred to WRNMMC's inpatient TBI ward (7E). Neurological examinations were normal and behavioral observations ruled out TBI as the cause of John symptoms. PTSD became the working diagnosis.

John began a 7-month comprehensive, intensive psychological and behavioral rehabilitation program consisting of: OT, RT, and speech-language pathology (SLP). John's medications were evaluated and adjusted to increase efficacy and decrease pharmacological burden. At this time, John and his wife also started intensive marital counseling. The counseling resulted in a significant decrease in marital discord and subsequently correlated with improvement in some of John's symptoms.

14.2.2 SDTTP Clinical Notes from Service Dog Trainer and Recreational Therapist

14.2.2.1 September 25, 2013: First Encounter with SDTTP

Shortly after his arrival on 7E, John was invited to participate in a volunteer SDTTP as part of OT/RT services. The intent was for this program to help improve his verbal fluency, increase independence in recreation/leisure participation, and increase community functioning. John liked the idea that these dogs would be partnered with veterans in need. He agreed to work with the therapist and the service dog instructor (SDI) even though he was skeptical that training the dogs would help his recovery. As part of his inpatient treatment he attended hour-long service dog training sessions 2–3 times per week for approximately 5 weeks.

John: I felt like, sure I'll play with your dog for a little bit, but what I really need to be doing is working on brain games or getting help for my speech and math issues.

SDI: In our first session, John's presentation was one of quiet and reserve. Speech and sequencing was a noticeable issue. A verbal greeting that would normally take seconds was challenging and proved to be a point of frustration.

RT: John was attentive and demonstrated bright affect as evidenced by smiling and laughing intermittently when directly interacting with the service dog. He responded appropriately to constructive feedback from the SDI and agreed to continue participation in the program.

14.2.2.2 Weeks 2 and 3 of the SDTTP

SDI: John seemed to be somewhat disinterested in our appointments initially, but would dutifully attend them anyway. Within the first few sessions working with Lundy (9 month-old male Golden Retriever) there was a noticeable and distinct bond forming between the two of them. Although John was having trouble initially remembering commands or even our names, his affect was noticeably more positive and he appeared more resilient to the challenges of remembering/verbalizing commands.

John: On the third visit I couldn't remember Lundy's name, even though, just days before, I had said it a hundred times. I couldn't remember the commands or say them because of my speech issues. I thought it was a waste. On the fourth session, it suddenly dawned on me that the dog training demanded the same brain skills as the computer games—except in real life/time. This training was helping me, I was helping Lundy become a service dog, and we were both working toward helping a Veteran in need. That's when I started to take program seriously.

SDI: At first we were conducting training sessions on the ward. As our sessions progressed and John formed an even closer bond with Lundy, we ventured to the first floor of the hospital—a crowded, noisy environment that would begin to challenge his arousal and avoidance issues. Lundy is routinely mistaken for a hospital therapy dog and was often abruptly approached and engaged by random people. These situations allowed John to practice and become more comfortable with healthy confrontation and setting boundaries with people.

John: As part of OT, I'd have to navigate the Metro or go shopping. These were stressful experiences, but I could manage to do them without talking to any strangers. Going out in public with Lundy meant that many people would approach and I would have to talk to them. I could talk to Lundy and I could talk to guys I knew, but memorizing, 'I'm sorry Ma'am he's a service dog in training,' and articulating that to a stranger made me very apprehensive. The first couple of outings were pretty stressful. I just focused on Lundy and said, okay, let's get through this. But Lundy was excited to be around me and just having him at my side gave me a sense of confidence and pride. My speech really improved as I worked with Lundy and I found it was getting easier to talk to strangers. That was a real confidence builder for me.

RT: John demonstrated active listening and learned training skills with verbal feedback requiring minimal demonstrations by the SDI. The dogs are rewarded with verbal praise, treats, and petting. He successfully ambulated through crowded hallways with a dog using verbal cues and adjusting his pace for proper training technique. John was initially distracted with passers-by, however his attention increased until he was able to focus on the task independently. John engaged in a conversational task while sitting in a public eating area with minimal difficulties noted. 10 Oct 2013.

14.2.2.3 18 October 2013: Week 4 of SDTTP: Public Training Outing (Bethesda Lunch with Metro)

SDI: Because John's attention was focused greatly on Lundy and the success of his training, we were able to successfully introduce increasingly stimulating environments for John and Lundy. Four weeks into the training program he agreed to an outing that involved taking the underground Metro train from WRNMMC to downtown Bethesda. Upon arrival at the metro station John was noticeably agitated at the task of riding the 230-foot escalator, down the dark tunnel, to the train. He gathered himself and was ready to step towards the downward escalator: Lundy however, was not. Lundy, being a puppy, had not yet been exposed to escalators and he stopped in his tracks. Since John's "white-knuckle, grit-your-teeth and bear it" coping strategy was not going to work for Lundy, in this situation, John was now confronted with slowing down and encouraging Lundy onto the escalator. As he focused on helping Lundy to feel more comfortable with the new experience, John effectively convinced himself to become comfortable with it as well.

John: My stuttering and stammering made me very self-conscious in public and I had very low confidence. I knew that I had to display confidence so that Lundy would feel confident. I tried to just focus on Lundy and move directly to the task, but Lundy stopped short when he saw the moving steps. With the SDI's help I

slowed down the process by walking back and forth so that Lundy could get used to the idea of this strange machine. I had to keep praising him and encouraging him. Finally, we were able to get on the escalator and both Lundy and I became more and more confident as we rode it up and down.

RT: Overall, John maintained exceptional emotional regulation when training the service dog while in the community. He required minimal cueing to offer verbal commands to the dog when appropriate.

14.2.2.4 21 October 2013: Week 5 of SDTTP. Public Training Outing - Walter Reed Navy Exchange (NEX)

RT: John attended a therapeutic SDTTP session with RT and SDI on an outing to the NEX. He demonstrated appropriate affect and required intermittent cueing to praise the dog when necessary. John ambulated throughout the session with independence. John demonstrated good emotional regulation skills when teaching simple commands to “stay” and “heel” when near dog food aisles. John was noted to require distant supervision as he and Lundy approached the escalator. John was also required to practice providing verbal commands when in the electronics area due to the increased distractions such as visual and auditory stimulation. He was noted to demonstrate fluid speech in 95 % of session and independently participated in conversational tasks.

John: Working with this young puppy was very challenging. Remembering the commands and being able to find and produce the words was very frustrating. Timing is incredibly important in dog training and my timing was not there. My depression and anxiety made it hard to express the happiness Lundy needed for encouragement, but the sense of purpose punched through. I didn’t want to mess this dog up, get him off-track, and keep him from helping a Vet. I was determined to display the confidence and support Lundy needed so that we could help somebody else.

14.2.3 Additional Service Dog Training Program Effects Reported by John

14.2.3.1 Reading Out Loud

John: “I was also having a lot of trouble reading. My doctor suggested I try reading aloud. I would do this in my room, but it was a struggle. I mentioned it the SDTTP Director and he suggested I try reading to Lundy. I thought it was a funny idea, but I quickly found that I could read much more smoothly while reading to Lundy.”

14.2.3.2 Sleep

April 15, 2014: John received permission from 7E medical director to have the service dog spend the night in his room to see if his sleep might improve with the dog present.

Medical Notes: John slept through night. Patient denies having any dreams or nightmares.

John: With Lundy at my side, I slept through the night for the first time in a year. I did not wake up even once during the nurses' hourly 'fall-checks.' The four nights Lundy spent with me I slept great and woke up feeling alert and like a different person.

14.2.3.3 Headache, Pain, and Depression

John: Working with Lundy also helped me with my migraines. On many occasions I thought I was in too much pain to work with Lundy. Still, I did not want to quit this mission, so I'd try. I'd start out in pain and unable to focus. When we came back an hour later the nurses would ask about my pain levels and I'd realize I had none. If I started out depressed, I came back laughing.

14.2.3.4 December 2013–March 2014

John was enrolled in a 10-week PTSD program at Oasis (San Diego, CA). John progressed well. Zoloft was discontinued. Lamictal 100 mg PO Qam was begun. John's depression resolved. John's conversion type symptoms resolved. Some anxiety symptoms have improved.

14.2.4 Outcomes and Case Resolution

March 12, 2014: John readmitted to 7E of WRNMMC for reevaluation and final disposition planning. SDTTP sessions recommenced.

14.2.4.1 24 March 2014: SDTTP Public Training Session (Naval Bowling Alley)

RT: John attended an on-base community reintegration outing to Naval Base Bowling Alley with therapist, wife, service dog in training and SDI. John demonstrated bright affect as evidenced by smiling and laughing throughout. He practiced heeling with dog while ambulating in the outdoor environment; required minimal cueing from SDI. John initiated bowling activity with independence. John did not demonstrate overt signs and symptoms (s/s) of distress when being exposed to loud noises from bowling pins, balls, and children laughing/yelling. John and wife were observed encouraging each other throughout session as evidenced by intermittently cheering, clapping and giving "high-fives." John's wife was noted to put her arm around him when sitting beside him. Both John and wife participated in conversational tasks with others. At the end, John reported that he enjoyed the session.

14.2.4.2 14 April 2014: Service Dog Note—Recreational Therapy

RT: John demonstrated bright affect and smiled while talking about his weekend—in particular the time spent at the collaborative nonprofit SDTTP organization's Puppy Center. John reported he is seriously considering training service dogs as a future employment. John and therapist discussed options for him to pursue service dog training opportunities post discharge, either through internship, employment, or both.

14.2.4.3 November 3–7, 2014 PT Accompanied SDI to a Concert Event in Times Square, NYC.

SDI: John independently navigated Times Square NYC, comfortably interacted with strangers, all while successfully handling Lundy. John demonstrated a significant improvement in symptoms and ability to reintegrate (see Figure on opening page).

14.2.4.4 18 April 2014—Discharge Summary

Psychiatric notes: John reports that he is better at conversing with people, and this only causes him minor anxiety now. John reports that he still has the tendency to isolate from people, but he is actively trying to overcome this habit. Currently, John reports that he is “hopeful and optimistic”. He reports 0/10 for depression.

Neurological notes: John no longer has any complaints regarding his spoken communication (this is an improvement from previously). John’s headache markedly improved.

Hospital Notes: John gained significant benefit from helping to train service dogs and worked well with the animal.

14.2.5 Concluding Remarks Excerpted from Patient Interview (12 December, 2014)

“My TBI rocked our family, but the lessons learned from teaching Lundy translated back to my home and personal life. I am able to talk and laugh. My kids have their Dad back and my wife and I are doing much better. When my teenage daughter challenges me, I am able to think it through more logically and not just lose it.

The brain games were good. They were challenging and I could see and track my progress, but they weren’t real life applications. The OT, Speech, and other therapies were also good, but in the end, it was the dog training that helped me.

This program is special and it worked for me. I know there are so many other Wounded Warriors it can help. I saw that when Lundy came to spend the night with me on the ward. The guys on the ward liked having Lundy up there as much as I did. One guy really liked talking to him. The nurses later told me that this patient never talked.

I am about to retire from 20 years of military service and will be entering an internship to become a Service Dog Training Instructor.”

14.3 Case History/Presentation (Bob)

ID: 34 y/o male, white, coast guard, lieutenant

Length of service: 15 Years

Military status: Active duty

Family Status: Married: 2000. Four sons ages: 12, 9, 8, and 6

Bob completed a number of stateside disaster missions with the coast guard including rescue and evacuation of victims during Hurricane Katrina. These missions

required him to gain and maintain order while conducting dangerous rescue and retrieval operations. Bob reported having always thrived “off adrenaline.” This fact was demonstrated by his desire to perform incredibly dangerous missions, take on increasingly challenging home front assignments, and risk his life while performing many high-risk leisure activities.

Alcohol became a social lubricant turning into a daily habit starting at a very young age. After sustaining knee and back injuries he also had easy access to narcotics. Bob recognized that he was on a very dangerous path but felt that he was in control and was still functioning at work so there was not really a problem. During this time he was hospitalized multiple times for Rhabdomyolysis or “Rhabdo”: a life-threatening syndrome due to muscle injury. “Rhabdo” results from the death of muscle fibers and release of the contents into the bloodstream requiring immediate medical attention. His home front mission also changed from the adrenalin-producing ship duties to working in an office and going home to his wife and four young children every night. He was getting away with alcohol and drug dependence and no longer routinely risking his life onboard the ship. He started an extramarital affair, which was the final point of contention for his wife.

14.3.1 Diagnosis and Treatment

14.3.1.1 December, 2013

Voluntary admission to Walter Reed Psychiatric Inpatient for treatment/evaluation for depression, risky behavior, suicidal ideation, and alcohol and drug addiction. Bob has a history of deployment-related PTSD and marital discord.

14.3.1.2 January, 2014

Patient transferred to 6-week, Intensive Outpatient Program for Addiction Treatment Services. Begins participating in SDTTP.

14.3.1.3 May 8, 2014

Begins a course of OT for behavioral health—specifically to continue participation in SDTTP.

Bob is currently undergoing genetic testing to understand why he has frequent bouts of Rhabdomyolysis, excessive pitting edema in bilateral lower extremities, chronic fatigue, and reduced strength. Bob is currently participating in outpatient OT at WRNMMC.

14.3.1.4 SDTTP Clinical Notes from Service Dog Training Instructor and Occupational Therapist

14.3.1.5 December, 2013

Bob had been in WRNMMC inpatient psychiatric ward (7 W) for 2 weeks when he was invited to volunteer for a program to help train service dogs for wounded warriors as part of the SDTTP.

Bob: I have always loved and owned dogs and so was very happy to ‘get a dog fix.’ I like the idea of helping to train dogs for amputees and guys who need them. I felt the benefit of working with the dogs immediately. The positive energy generated during that first hour, left me feeling much better.

14.3.1.6 January, 2014

Bob transferred to intensive outpatient program for addiction treatment services and continued to partake in the training of Lundy (12-month-old golden retriever) during weekly group SDTTP sessions.

Bob: The SDI showed the group how to use positive and nurturing encouragement and praise to teach the dogs. It was not easy for me since I was depressed, but the SDI instructed us to fake the high-pitched, happy voice for the dog’s sake. I had used harsher, heavy-handed training methods on my own dogs. However, seeing how well these young dogs responded to our supportive friendly efforts and enthusiastic praise was very impressive. So this has been a very refreshing and new way to learn how to train dogs. I called my wife and told her how great it was working with the dogs and how much I was looking forward to each session.

SDI: Bob participated in one-hour per week group service-dog training session for four weeks while in Addiction Treatment Services. He was very attentive and receptive to SDI instructions and worked appropriately with the dogs in training. Positive affect/high emotion praise was challenging for Bob but with coaching and demonstration, he was ultimately successful in feigning positive emotion to praise the dog in training.

14.3.1.7 June 2014

Patient enters outpatient OT program including one-on-one therapeutic service dog training sessions (Total of 5 h of SDTTP instructions).

OT: Bob was socially withdrawn and had a hard time making eye contact. Functional limitations from fatigue. Behavioral therapies had limited effect on his ability to cope with pressures on the home front. He is very concerned about his mental and physical wellbeing as well as the implications for his future and the future of his family. Bob reports sobriety \times 150 days.

Bob: By the time I began my one-on-one training sessions, as part of out-patient OT, I was no longer faking my positive feelings when encouraging the dog’s efforts. I had begun to get through my weeks, just looking forward to these sessions. The ‘dog time’ was carrying me through my weekend too.

For so long I had isolated myself. I dreaded the public and going anywhere near crowds. The first time I took Lundy on a public training session, I felt a sense of calm and empowerment with him at my side. By focusing on Lundy, I was able to see a path through crowds. It was as if Lundy parted it for me. That was when I first considered applying for a service dog for myself.

Alcohol was always a social lubricant that helped me talk to people and get to know them. The dog is now that social lubricant. It also takes the attention off me and directs it to the dog.

Training these young dogs is very challenging. I was easily frustrated. The SDI really helped me shift my attitude and use positive reinforcement methods to succeed with the dogs. Working with the dogs taught me patience and understanding of the dog's needs. I only wish I could have used these training methods while I was working with those under my command.

14.3.1.8 June 30, 2014

OT: Bob's wife said she was thrilled with the change in Bob she was seeing at home. She came to one of the training sessions so she could, "see how a dog could be creating so much change." She quietly joined SDI and Bob during their session. When they returned to my office after the session she was smiling from ear to ear. Later, when I spoke to her separately she commented on how amazing it was to see her husband so calm and collected, focusing on Lundy instead of everything else. This is the change she had been noticing around the house but did not understand what we were doing to make it happen.

Bob: In 2012, my wife and I were seeing a marriage counselor. My alcoholism, drug abuse, depression, risky behavior and infidelity had brought us to the brink of divorce.

Learning the skills of positive affect and praise in service dog training has helped me to experience empathy for my wife, my sons, others, and myself. Family members comment on how much more affectionate and present I am now.

The way that I used to parent was harsh—focusing on the negative consequences of behavior—'life is hard and you learn hard lessons.' That's how I was raised. Now, I engage my children in conversation and try to identify with their issues; helping them visualize what they can work towards. It's motivating—just like with the dogs. I am more connected with my family than I've ever been. My boys see the change and they are forgiving me for not being there for them in the past.

14.3.1.9 July 2014

Bob: Of the programs offered to me, some were good and others were a waste of time. The service dog training program was the best. Training a service dog for a Veteran is a huge service to provide. It gives me a tremendous sense of purpose and accomplishment. When you're working through an injury, finding a sense of purpose is really, really key to feeling successful. I know there are so many out there just like me—who can't ask for help, but could benefit from working with these dogs.

14.3.2 Outcomes

14.3.2.1 January 7, 2015

OT: Over the course of treatment in the OT program, Bob began to slowly make progress in his ability maintain a positive outlook, continued to maintain his sobriety and continues to make progress with his family. He has accepted that the physical challenges which once invigorated him are now debilitating and is accepting

his more limited physical capacity. His relationship with his wife and children significantly improved when he started using the positive, encouraging, focused, behavior-shaping strategies of the SDTTP when relating to them. Bob benefited significantly from his involvement in the SDTTP.

Bob: “I have just completed my first year of sobriety. My depression has lifted and I feel connected to my family. I still struggle with pain and fatigue, but I feel much more positive. I am able to pace myself better and allow myself to take the time to rest and regain my emotional and physical strength. I am much more aware of what will trigger my arousal response and find that I can cope better when unexpected stressors occur. My frustration tolerance has significantly improved. My empathy and patience levels have also improved. I am better at setting healthy social boundaries and prioritizing time for my family. I’m really enjoying and committed to sharing my story and the healing lessons I’ve learned from the SDTTP with other Wounded Warriors. I am looking into pursuing a career as a Service Dog Instructor.

14.4 Concluding Remarks

Research has shown that the presence of animals in a psychological therapy setting can increase the willingness to enter into therapy, facilitate therapeutic alliance, reduce the rate of attrition, and reduce the symptoms of trauma [2–4]. Most recently, Hunt and Chizkov (2014) [5] showed that adults who recalled and wrote about trauma in the presence of dogs found the essay exercise less distressing and had significantly reduced symptoms of depression at follow-up than those who completed the writing exercise without a dog.

Over the last 20 years, there has been an increasing scientific awareness of the similarities between the neural, neurohormonal, and genetic mechanisms that regulate stress and social behaviors in all mammals. A growing body of evidence shows that the nurturing training methods, similar to those used in the SDTTP program provides positive sensory stimulation that can activate the antistress/pro-social brain network in both humans and dogs [6–10]. These findings illuminate how and why this service dog training program can be so emotionally and therapeutically powerful and emphasizes why therapy based on clinical theory and positive dog training skills can be effective at reducing the full range of symptoms in a condition as complex as PTSD [11–15].

Over the next several years, the collaborative nonprofit SDTTP organization—in partnership with researchers from the Uniformed Services University of Health Science, NICoE, WRNMMC, and the University of Maryland—will be testing this hypothesis in order to establish therapeutic service dog training as an evidence-based therapy for the reduction of symptoms of combat-related PTSD.

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