

An Example of the Effectiveness of Contingent Skin Shock with Problem Behaviors that Proved Refractory to Standard Positive-Only Techniques

Nathan A. Blenkush, Robert E. von Heyn, and Matthew L. Israel

The Judge Rotenberg Center

There exists a population of individuals with developmental disabilities and/or mental illness who exhibit problem behaviors that are refractory either to current positive-only behavioral interventions based on behavior function or to pharmaceutical interventions. These individuals are often warehoused in residential treatment facilities or psychiatric hospitals, contained using near-constant mechanical restraint and movement limitation, or prescribed large doses of psychotropic medications that largely suppress their ability to acquire new skills or interact with their family. Contingent skin shock (CSS), however, in combination with reinforcement procedures, has proven to be effective in treating the self-injury, aggressive behaviors, and rumination behaviors of such individuals (e.g. Duker & Seys, 1996; Foxx, McMorrow, Bittle & Bechtel, 1986; Linscheid & Cunningham, 1977) and makes possible effective treatment without the use of psychotropic medications.

In this report we describe the treatment of problem behaviors exhibited by a 19-year-old male (C.M.) with past diagnoses of Pervasive Developmental Disorder, Post-Traumatic Stress Disorder, Attention Deficit Disorder, and Expressive/Receptive Language Disorder.

From September 1997 to March 2002, C.M. attended a well-respected residential school for special needs which treated him primarily with what most persons would characterize as "positive-only" behavioral interventions. While C.M. attended this school, he engaged in the following problematic behaviors: (a) aggressive behaviors, which consisted of punching, kicking, biting, spitting and throwing feces at others; (b) health dangerous behaviors, consisting of punching his eyes, hitting or banging his head against objects, pulling his teeth out, biting himself, ingesting inedibles, and inserting objects into bodily orifices; (c) property destruction, consisting of behaviors such as clothes ripping,

inappropriate urinating on objects and fecal smearing; (d) major disruptive behaviors, consisting of tantrums, yelling, disrobing in public, inappropriate sexual behavior, and swearing; and (e) noncompliance.

Over the course of 4.5 years, the school in question systematically utilized positive reinforcement procedures, antecedent interventions, and medications (Ritalin, Risperdal, Tegretol, Buspar, Trazadone, and Benadryl) to address C.M.'s behaviors. Previous medications that had been used with C.M. prior to attending that school included Clonidine, Haldol, Mellaril, Depakote, Dexedrine, and Corgard.

At one point, after obtaining consultation from a nationally-known expert in behavioral psychology, the school in question implemented a treatment plan that, contingent upon good behavior, allowed C.M. to select who would work with him on an hourly basis, choose from any preferred item or activity, and request breaks and conversations at any time. In addition, surprise rewards were delivered on a variable-time schedule. Following certain targeted maladaptive behaviors C.M. was punished by being given non-preferred meals and denied any form of social attention until he exhibited eight consecutive hours of appropriate behavior. None of these interventions were successful and C.M. continued to be restrained at a frequency of from 1 to 10 times per day. Eventually his behaviors became so problematic that he was expelled and was subsequently admitted to the Judge Rotenberg Educational Center (JRC).

Upon admission to JRC, C.M. continued to be treated with positive-only interventions such as differential reinforcement (both DRO and DRA), extinction, privilege loss, and response cost. These procedures were used for three months, at the end of which period it became clear that the procedures had proven insufficiently effective. On June 3rd, 2002, JRC supplemented C.M.'s treatment with a programmed CSS application after each instance of a targeted problem behavior. Prior to starting this treatment these safeguard procedures were followed: (a) informed consent was obtained from his parents; (b) individualized approval for his treatment plan was granted by a Massachusetts Probate Court; (c) a psychologist retained by the attorney that represented C.M. in the Probate Court case approved the treatment plan; (d) a physician certified to the absence of

medical contraindications to the use of CSS; (e) a psychiatrist certified to the absence of psychiatric contraindications; (f) a peer review committee approved the treatment plan; and (g) a human rights committee approved the treatment plan.

At first, skin shocks were delivered with a remote controlled skin-shock device known as the Graduated Electronic Decelerator (GED) which has an intensity of 15 mA when used across a 4 kΩ resistor (average skin resistance for the GED) and lasts for a fixed period of two seconds. After 9 weeks, C.M.'s clinician determined that, because of the insufficient change the frequency and intensity of C.M.'s behaviors, a stronger stimulus was needed. On August 14th, 2002 the GED-4 was substituted in place of the GED. The GED-4 has an intensity of 41 mA when used across a 1.6 kΩ resistor (average skin resistance for the GED-4) and lasts for two seconds.

[Charts 1-5](#) show the monthly frequency of Aggressive, Health Dangerous, Destructive, Major Disruptive, and Noncompliant behaviors. [Chart 6](#) is a composite of the data presented in [Charts 1-5](#). The vertical intervention lines indicate the two months during which the GED was added and during which the GED-4 was substituted for the GED. Because each of those intervention changes did not take place on the first or last day of the month, the monthly totals for those two months are based on data for some days prior to the day on which the intervention was changed and on some days after the intervention was changed. Finally, celeration lines (calculated using the least square method) describe the frequency trend after the GED-4 was added.

[These charts](#) demonstrate that a more intense shock may be necessary to decelerate the problem behaviors of some individuals. This finding is consistent with Williams, Kirkpatrick-Sanchez, and Iwata (1993) who found that a mild shock (delivered from SIBIS) was not sufficiently effective and a more intense shock was necessary to reach clinically significant results. In addition, our data show that the frequency of each category of problem behavior decelerated over the course of almost 5 years. This finding is consistent with Linshcheid and Reichenbach (2002) who demonstrated the long-term effectiveness of CSS over a 5 year time period.

References

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